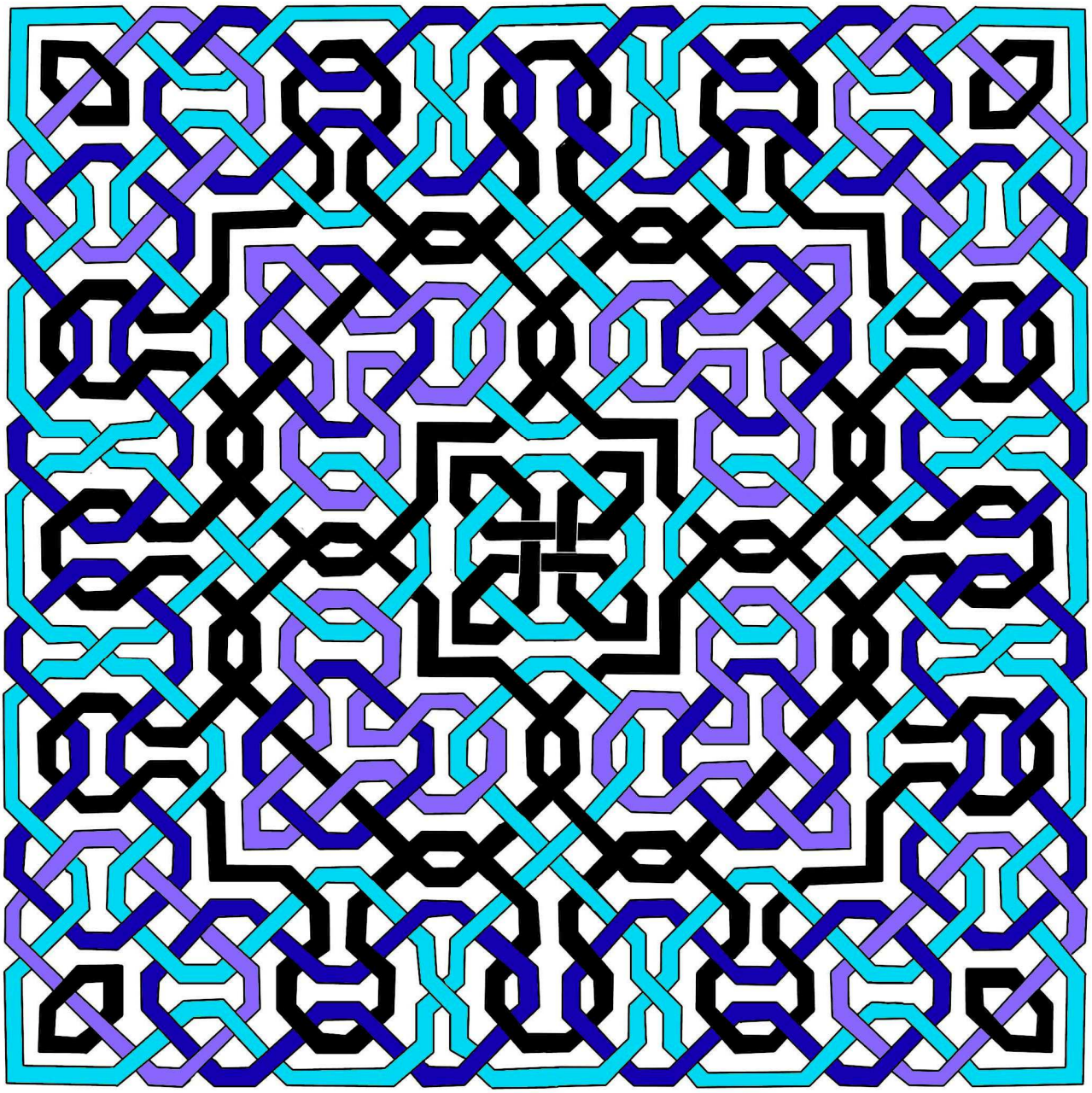
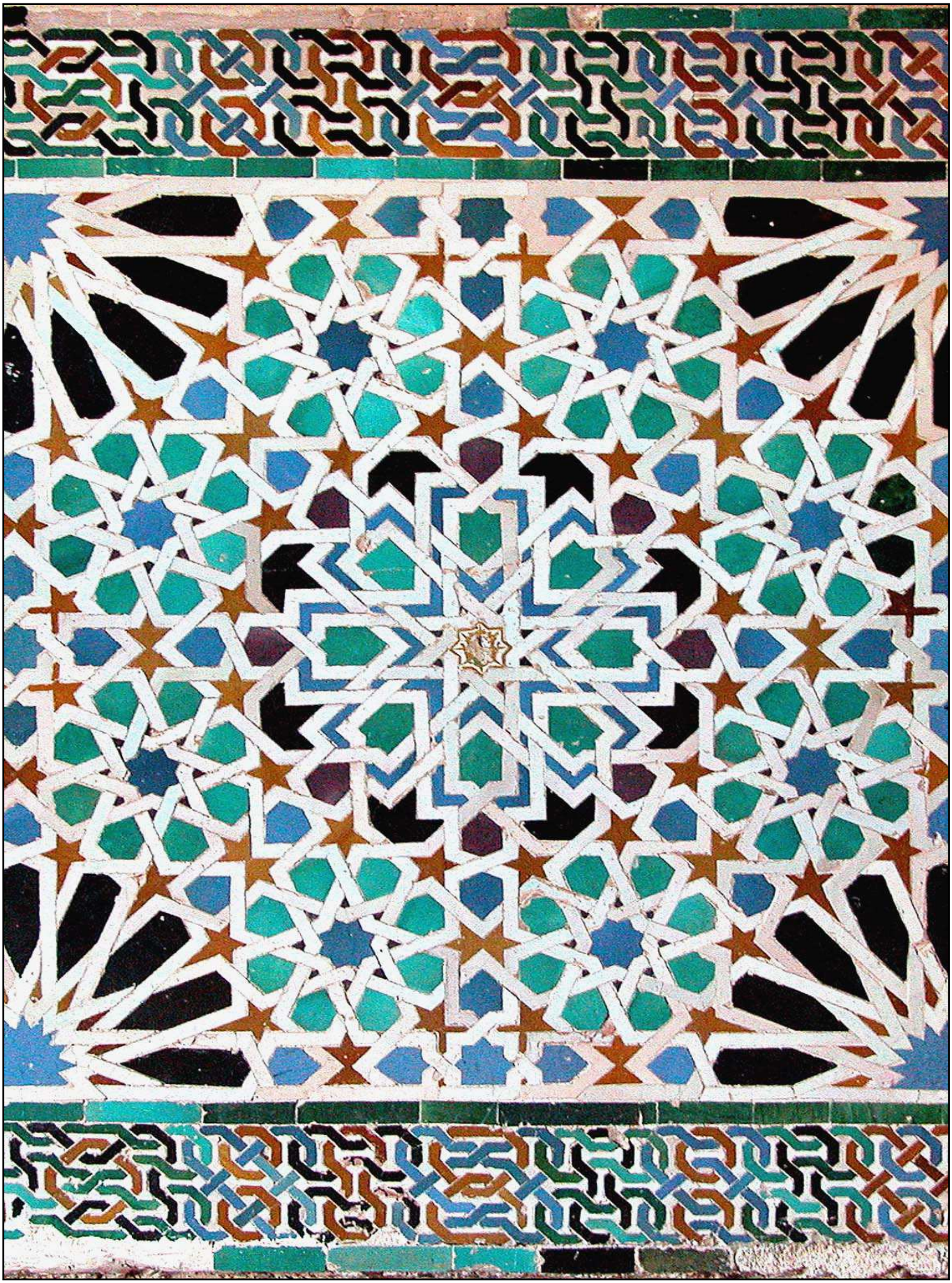
La géométrie des Arabesques

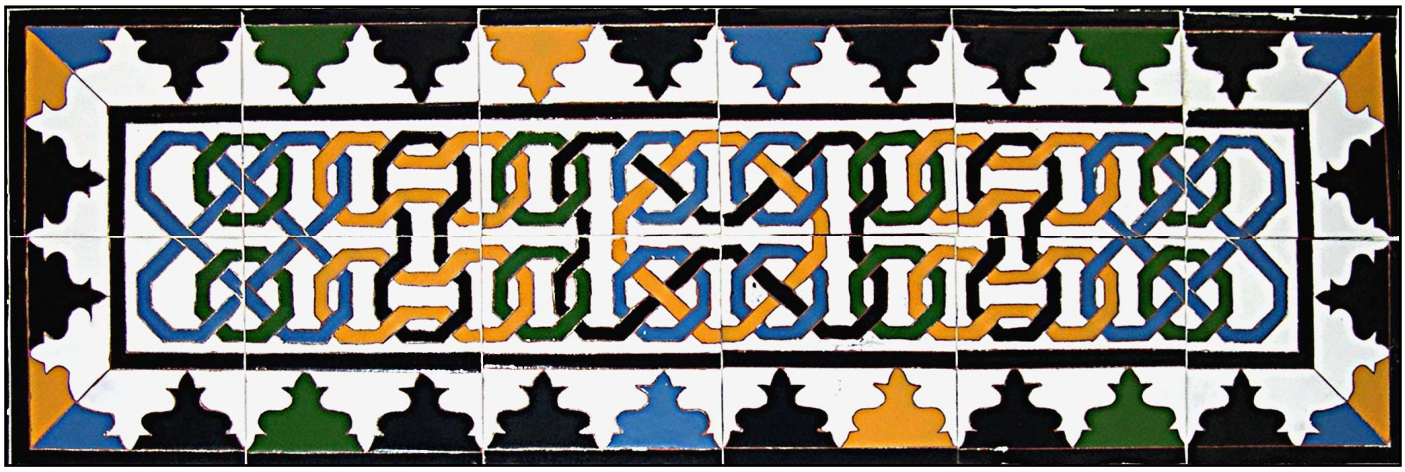


VII. DESSIN : LES ENTRELACS COLORES



Frise d’entrelacs colorés de la salle du Mexuar à l’Alhambra de Grenade.

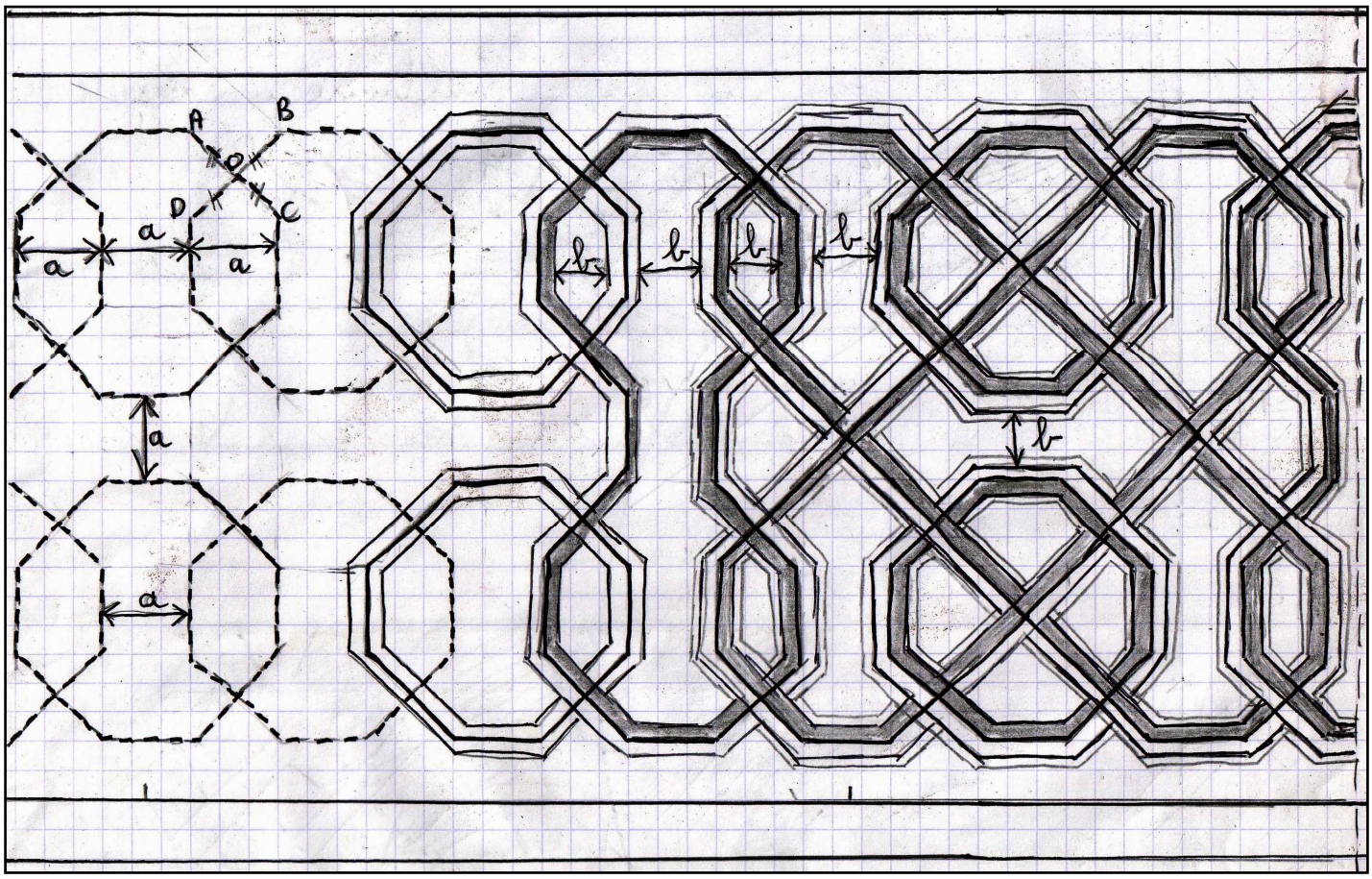
- *Mise en place des modules*



Deux suites superposées d'octogones **irréguliers** sont associées pour faire apparaître le dessin désiré.
Ces octogones *irréguliers* sont construits tels que :

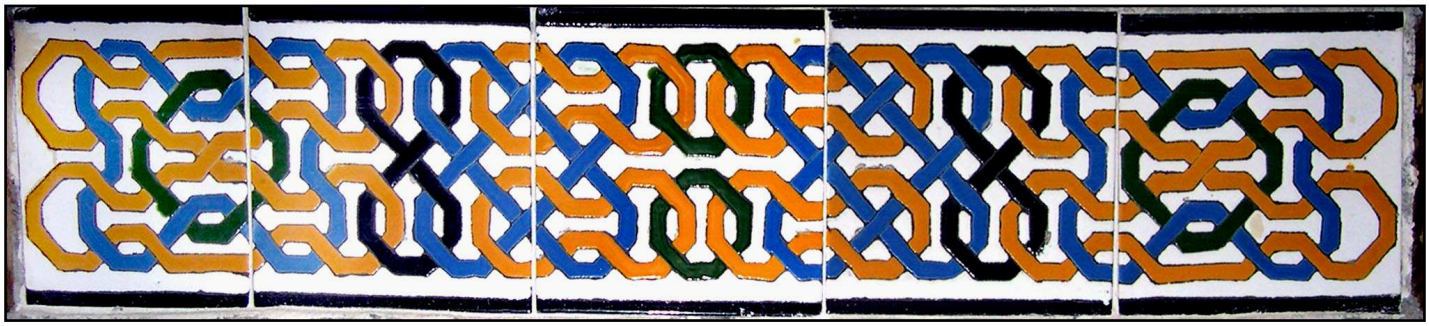
- OA = OB = OC =OD
- Que tous les intervalles aient pour mesure **a** .
- Que la largeur entre les entrelacs soit égale à **b.**

Dans l'exemple ci-dessus ces règles n'ont pas été respectées car les octogones utilisés sont réguliers : cela crée un déséquilibre dans les surfaces.

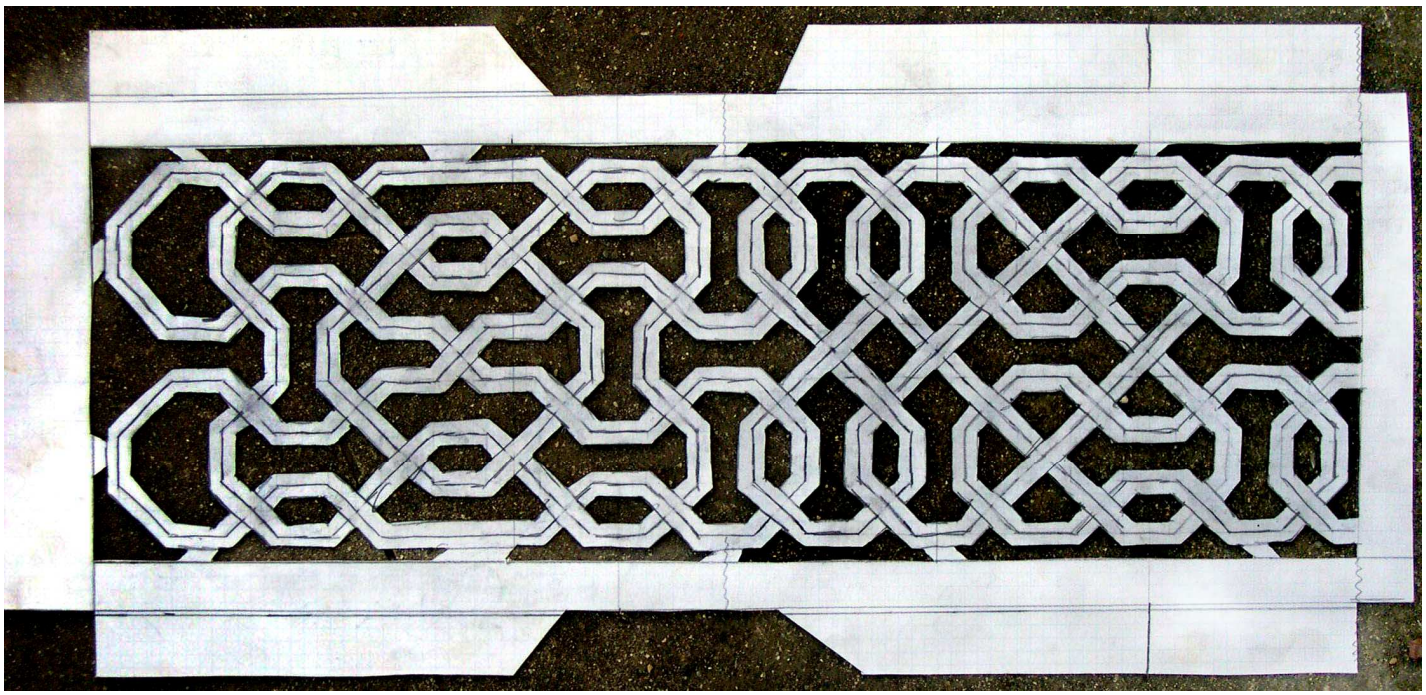


- *Construction pratique :*

Deux exemples d'un ensemble de huit frises du riad Loulou.

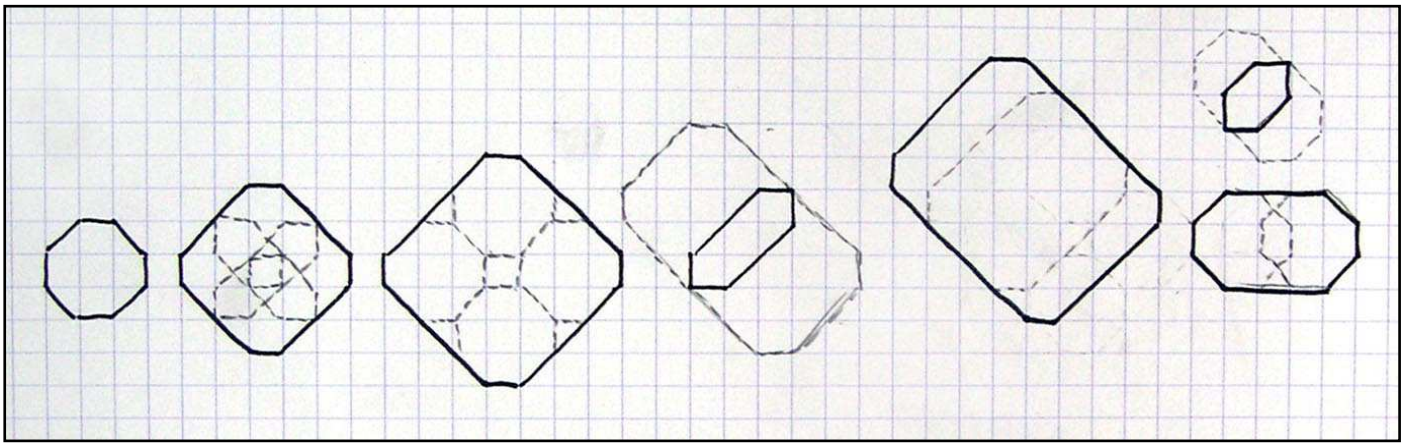


Ces frises ont été exécutées en utilisant le gabarit ci-dessous et ne diffèrent que par le choix des couleurs. Tous les espaces **a** et **b** ont été respectés.



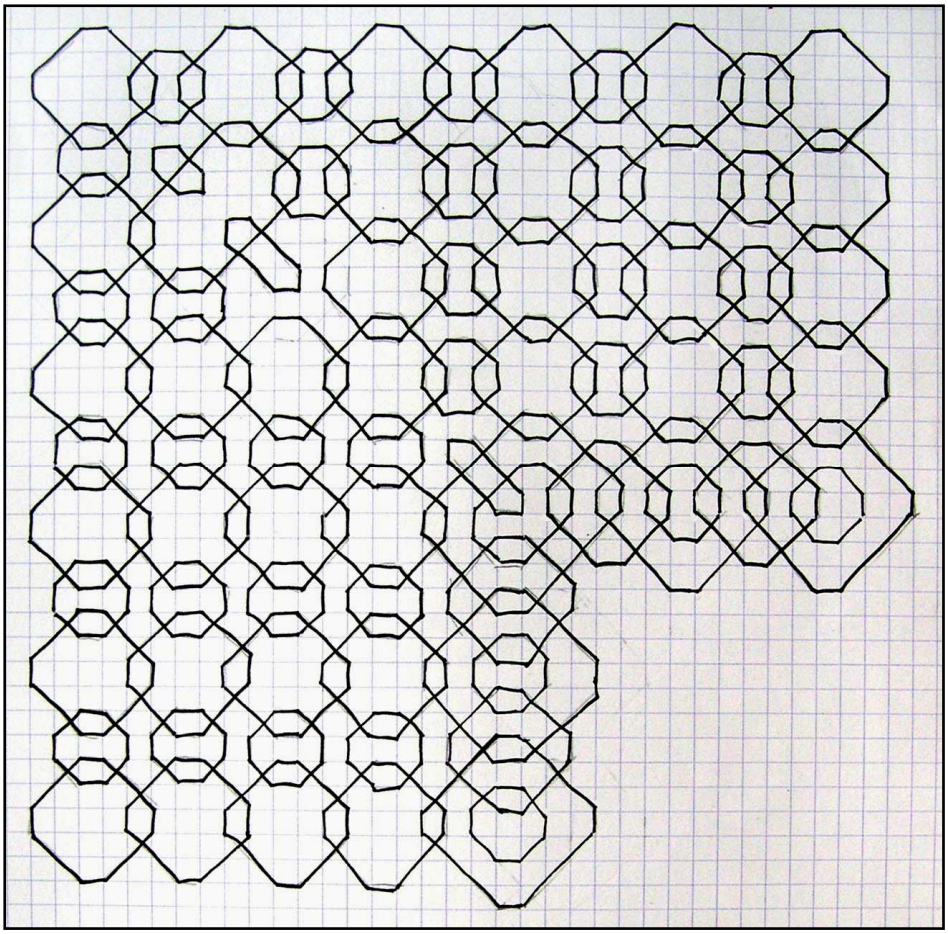
- *EXEMPLE : premier motif **simplifié** de type Alhambra (salle des deux sœurs).*

L'analyse de cet enchevêtrement d'entrelacs permet de trouver la méthode de construction : différents modules permettent de construire ce dessin ; chaque module est un octogone **irrégulier**.



Choix des modules.

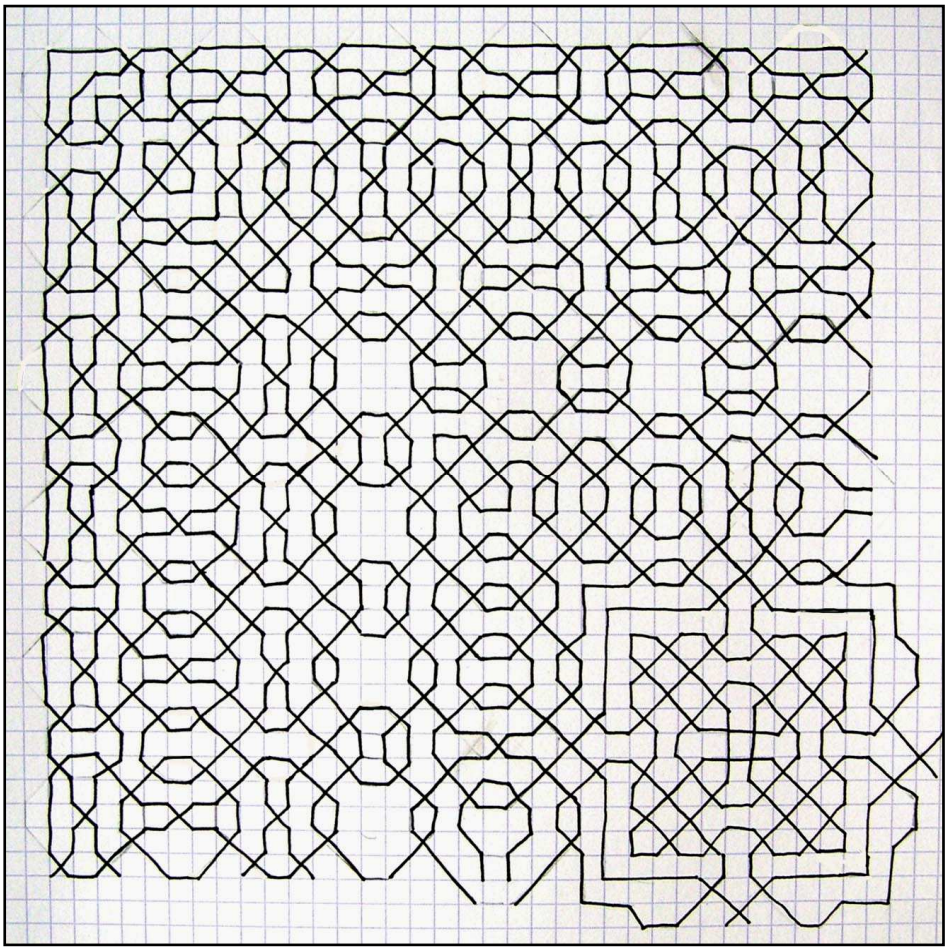
Mise en place du pavage :



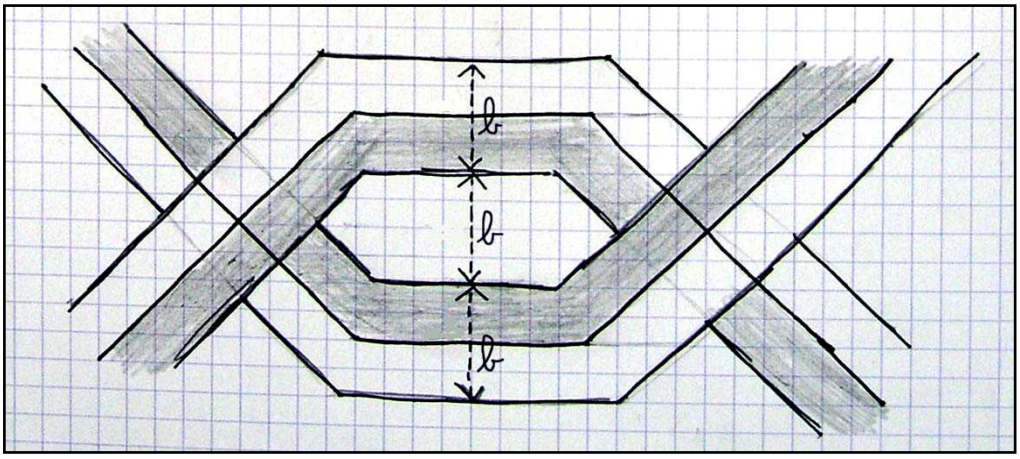
Ce pavage est constitué de ces différents modules. Le dessin étudié présentant différentes symétries, seule une partie sera étudiée.

Le motif central, dessiné en utilisant le quadrillage de la feuille de papier, est formé de modules.

Liaisons des modules:

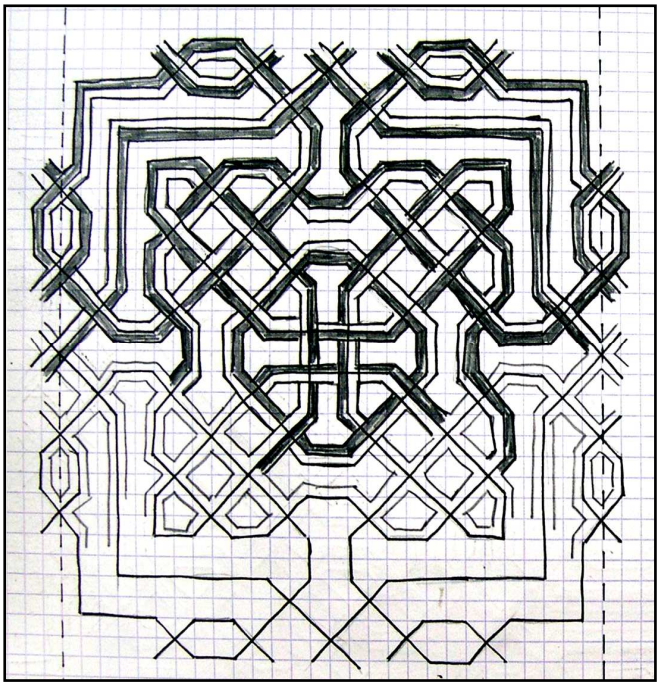


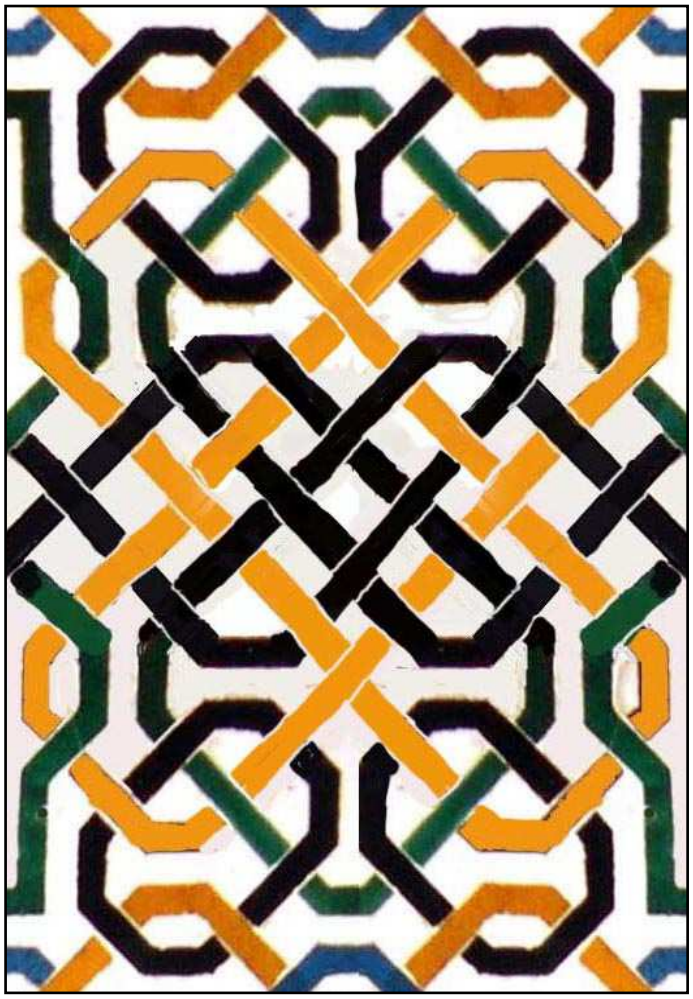
La construction des entrelacs se fait de la manière habituelle ; la largeur de l'entrelacs est choisie de façon à avoir des espaces de même dimension.

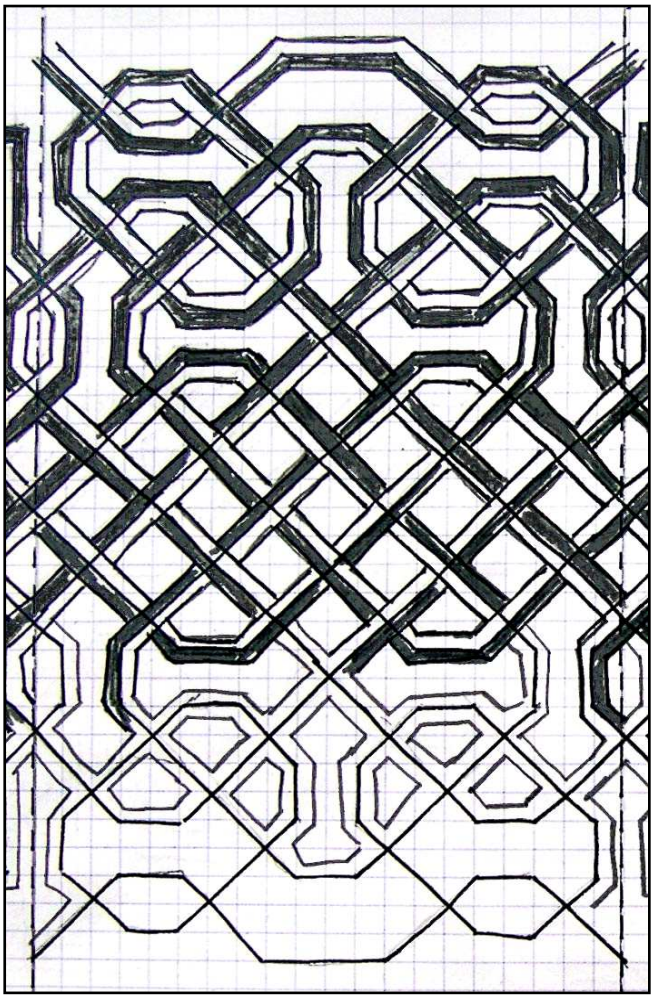


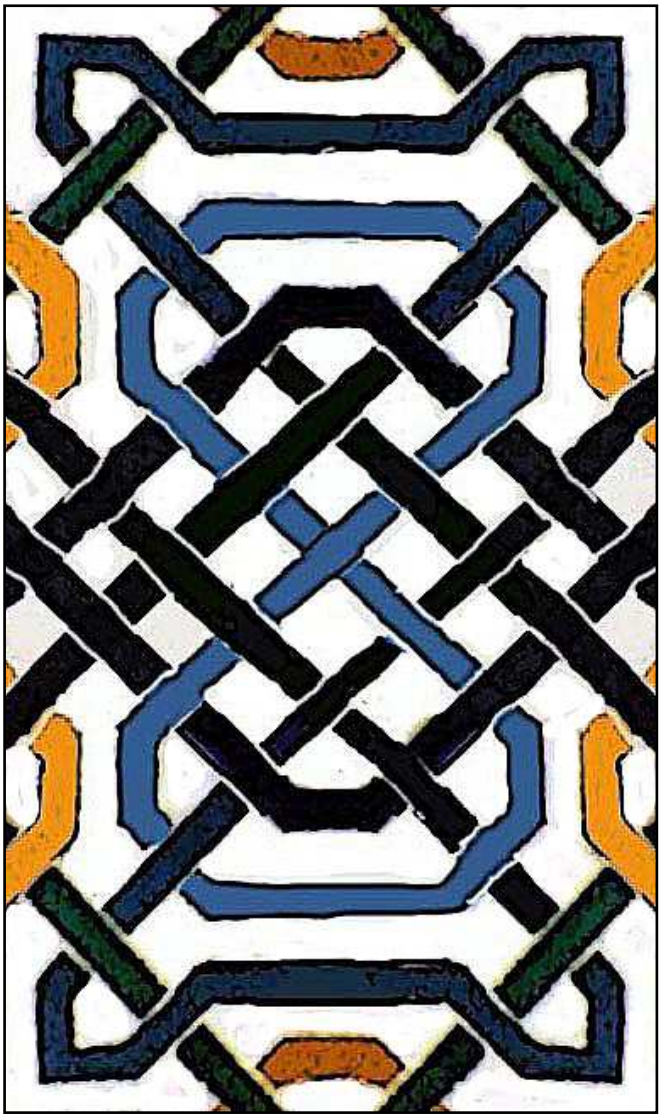
Détermination de la largeur de l’entrelacs et construction :

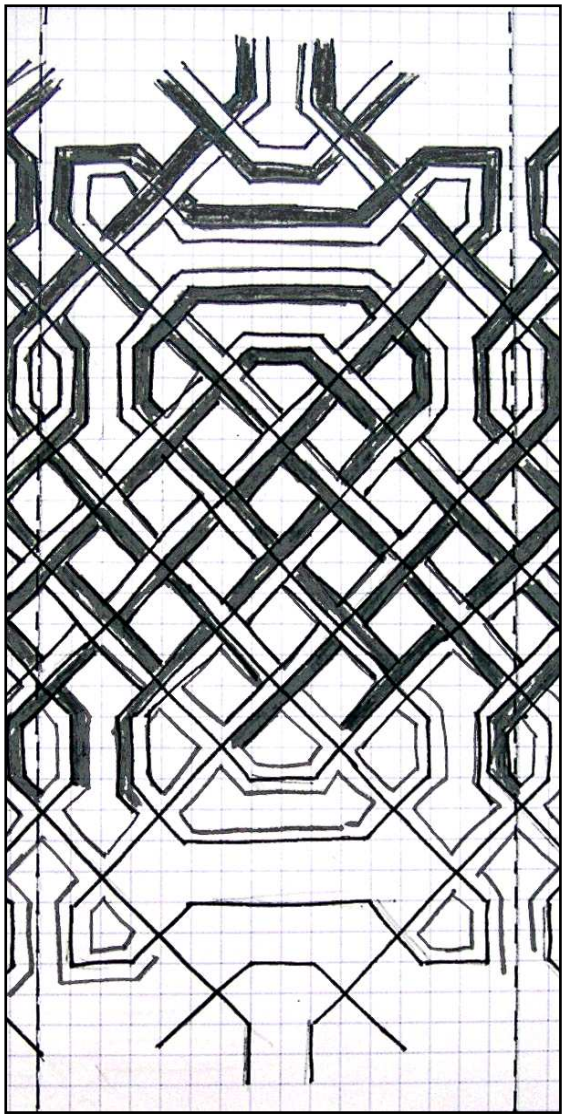
Etude des motifs centraux.

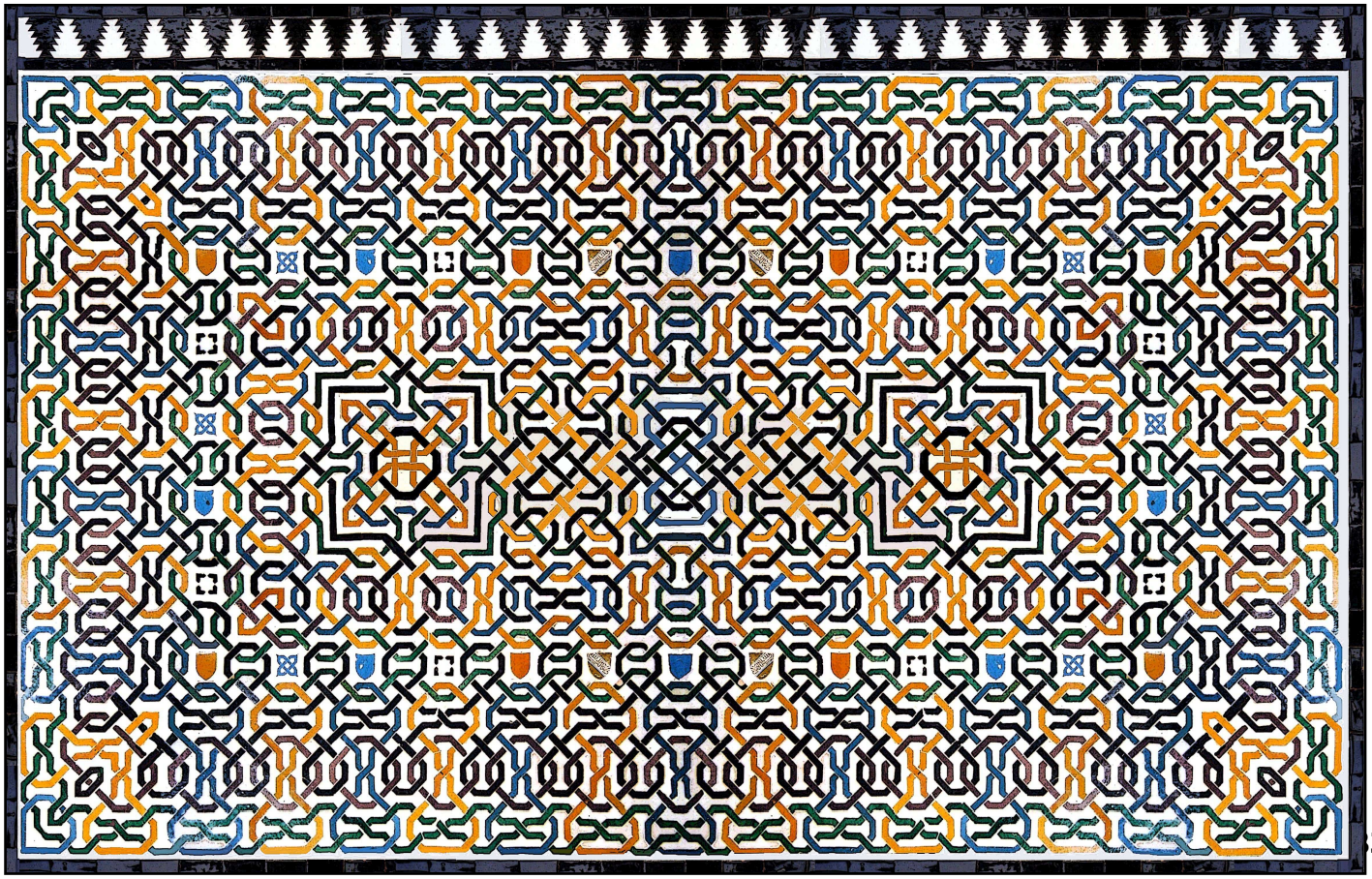




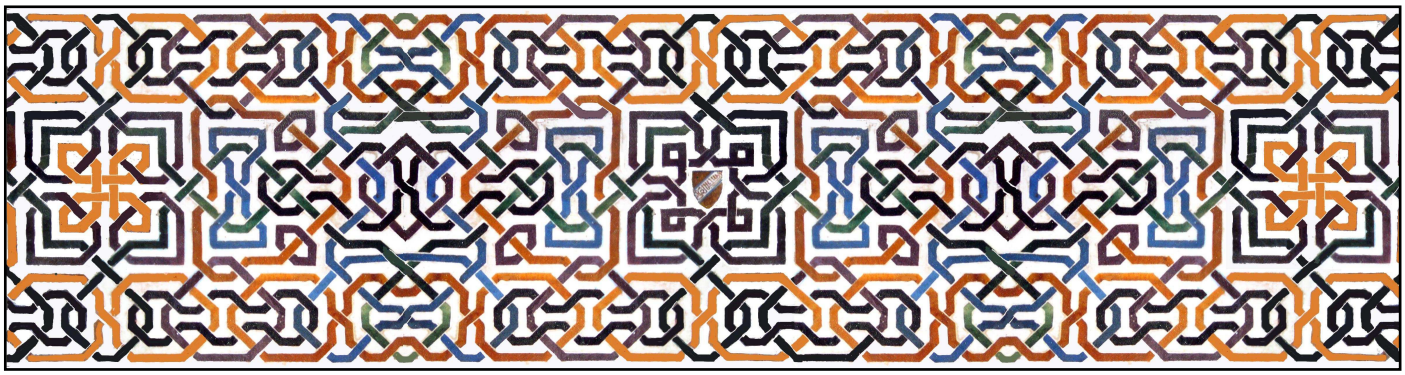




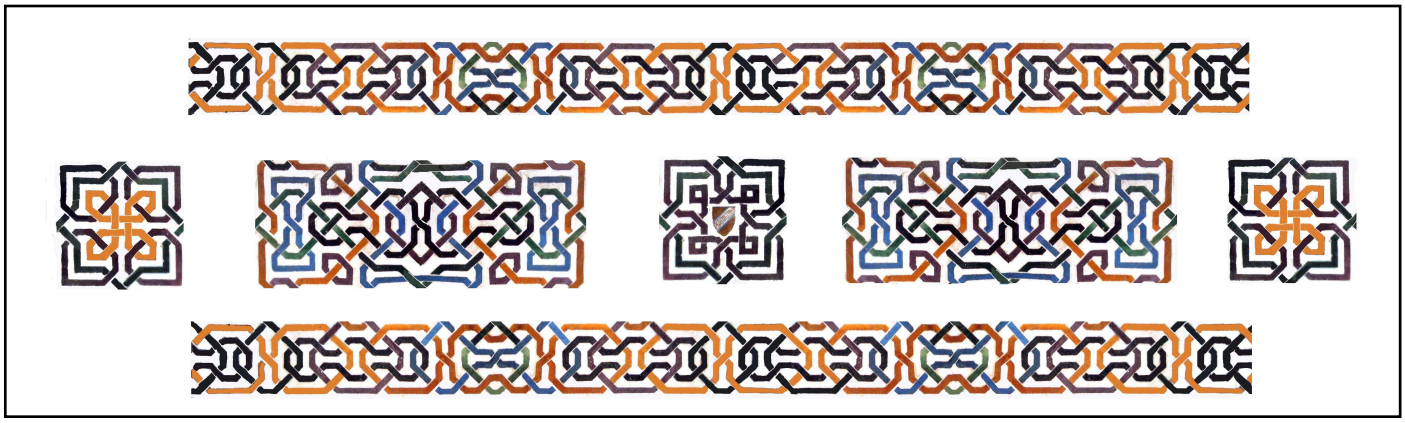




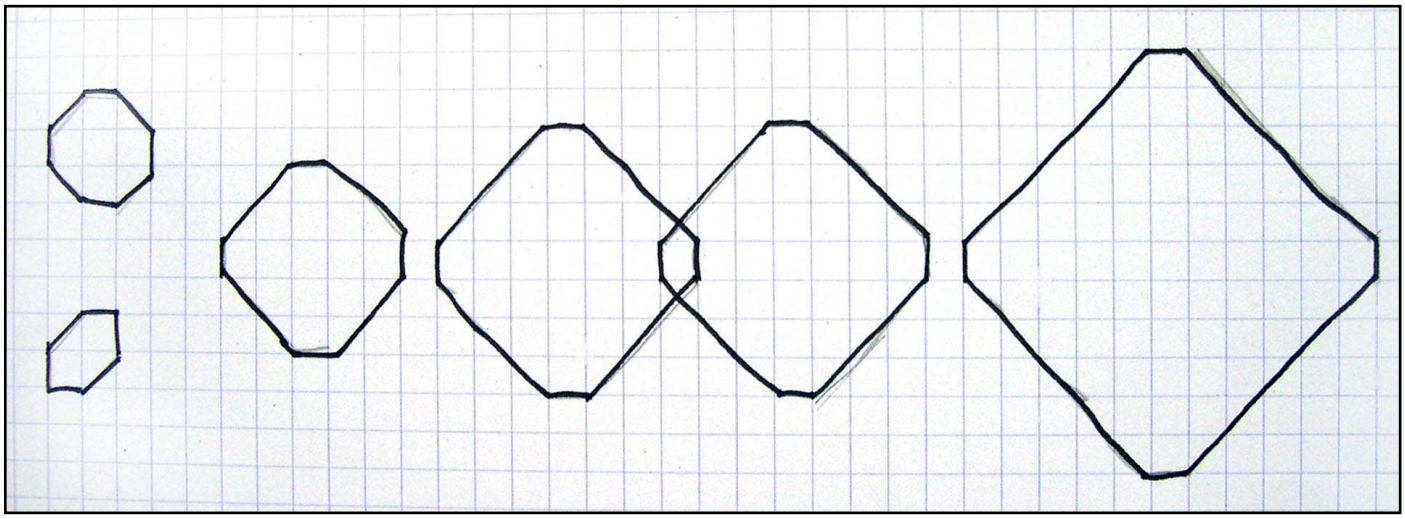
- *EXEMPLE* **:** *étude d'une frise.*

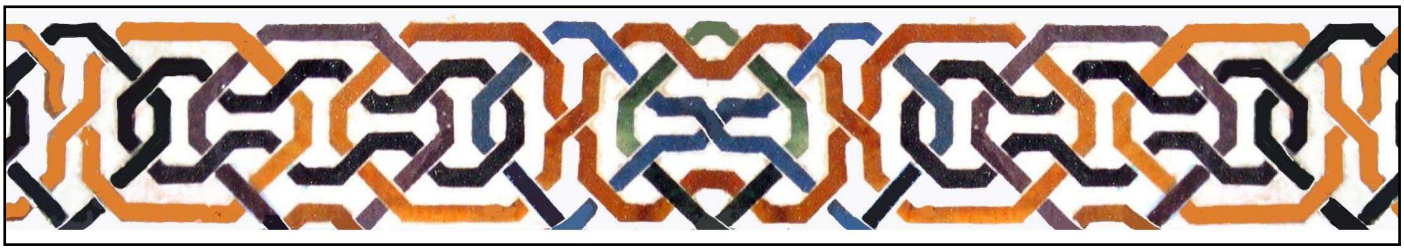


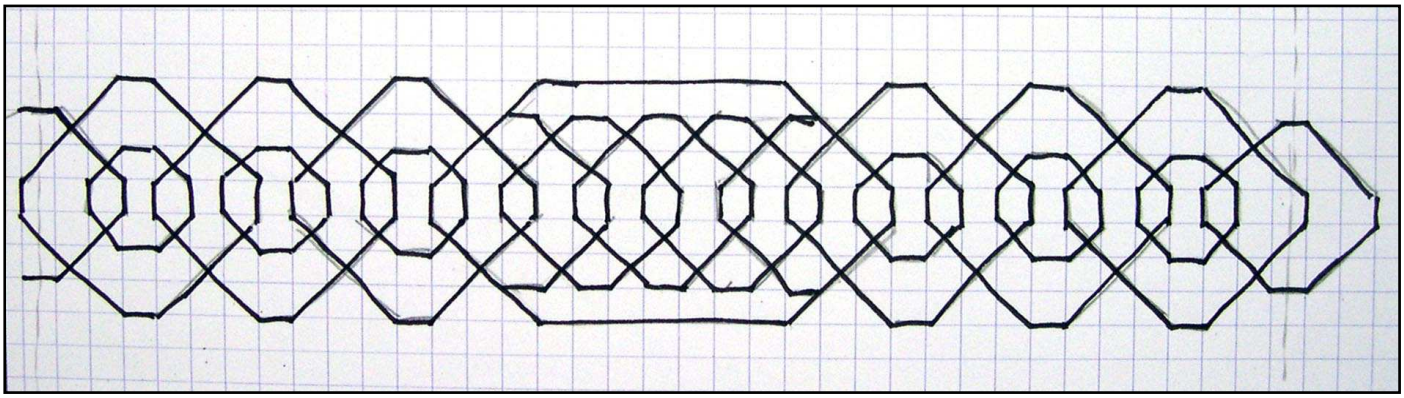
Cette frise n'est pas limitée en longueur, elle peut être allongée par translation du rectangle minimal ou former un cadre.

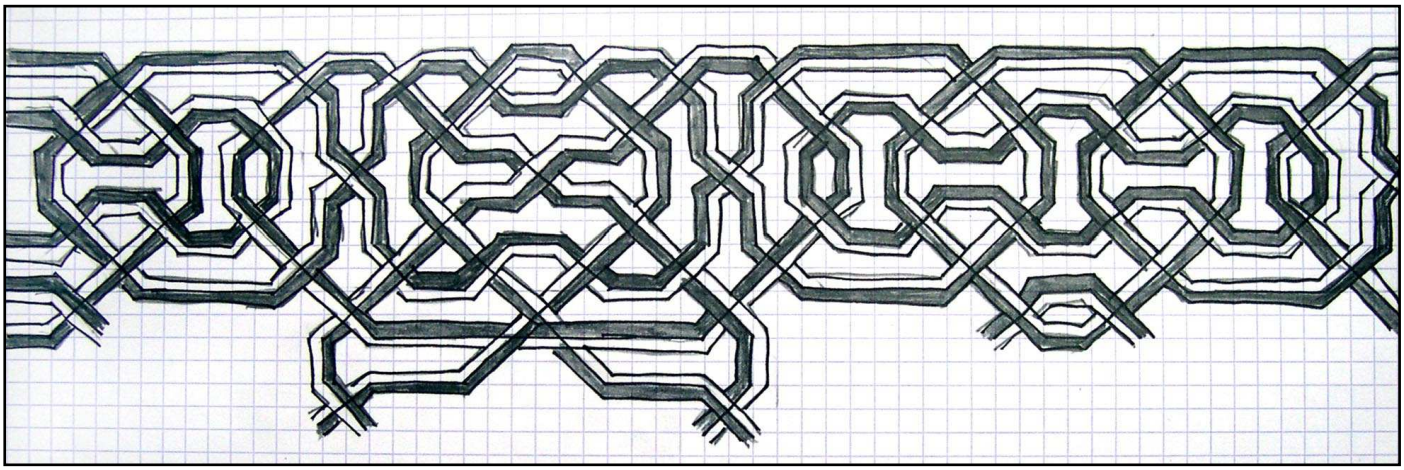


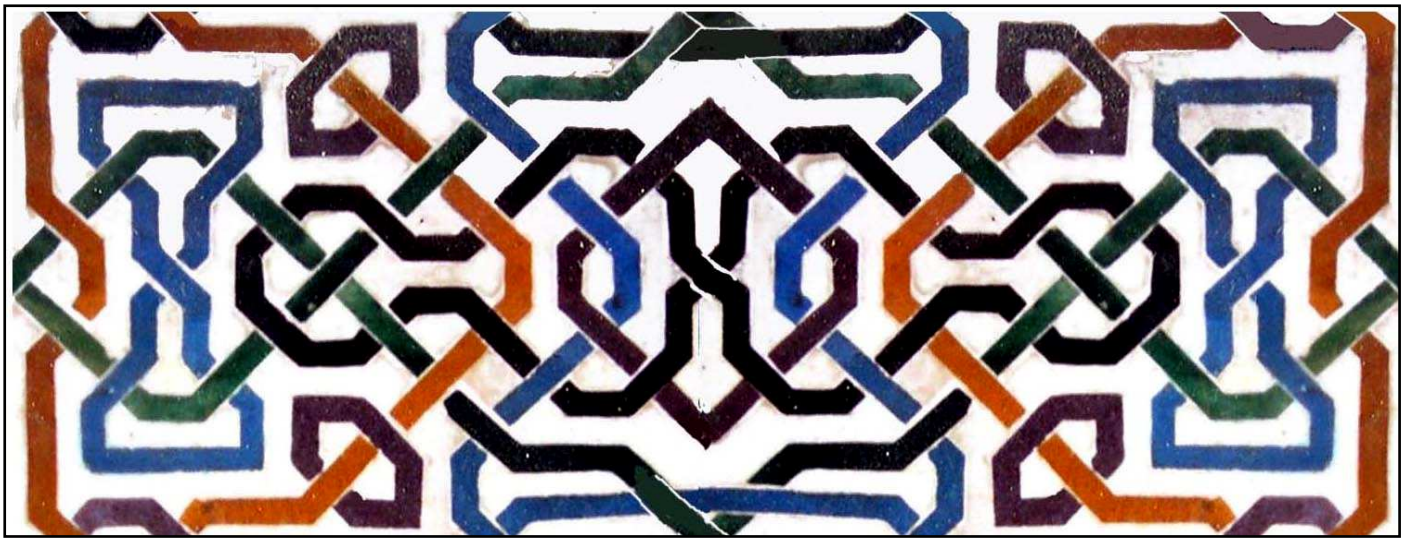
Modules servant à construire l'ensemble :

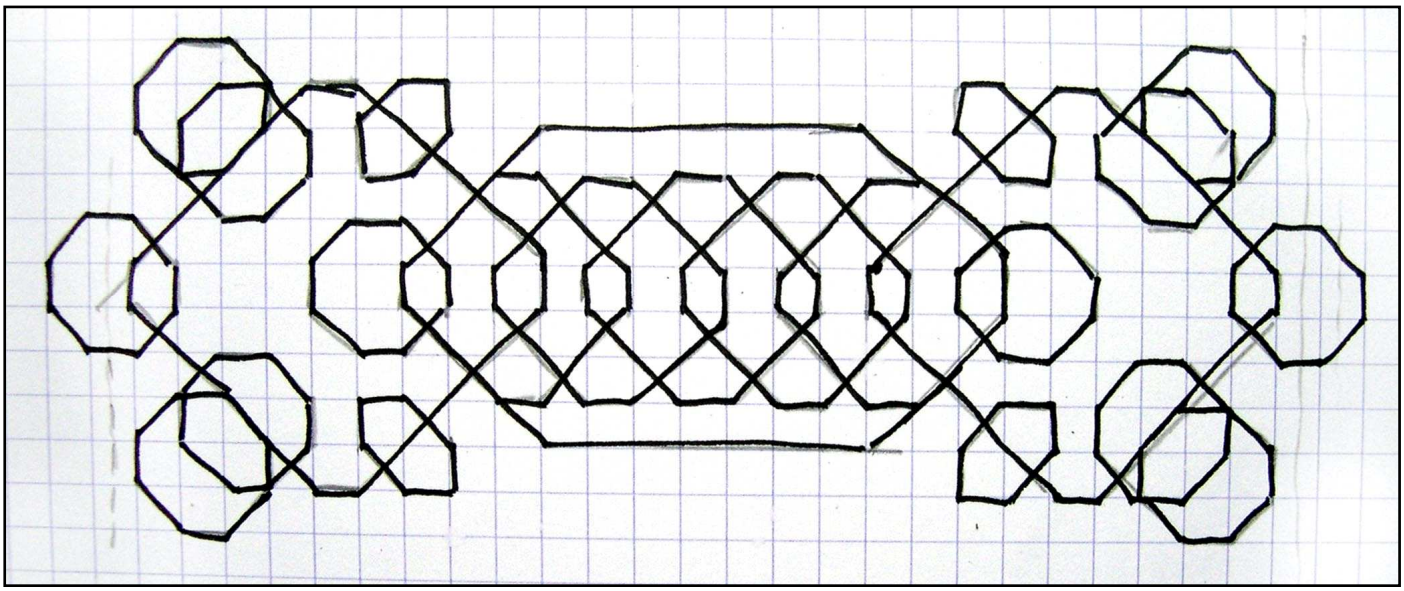


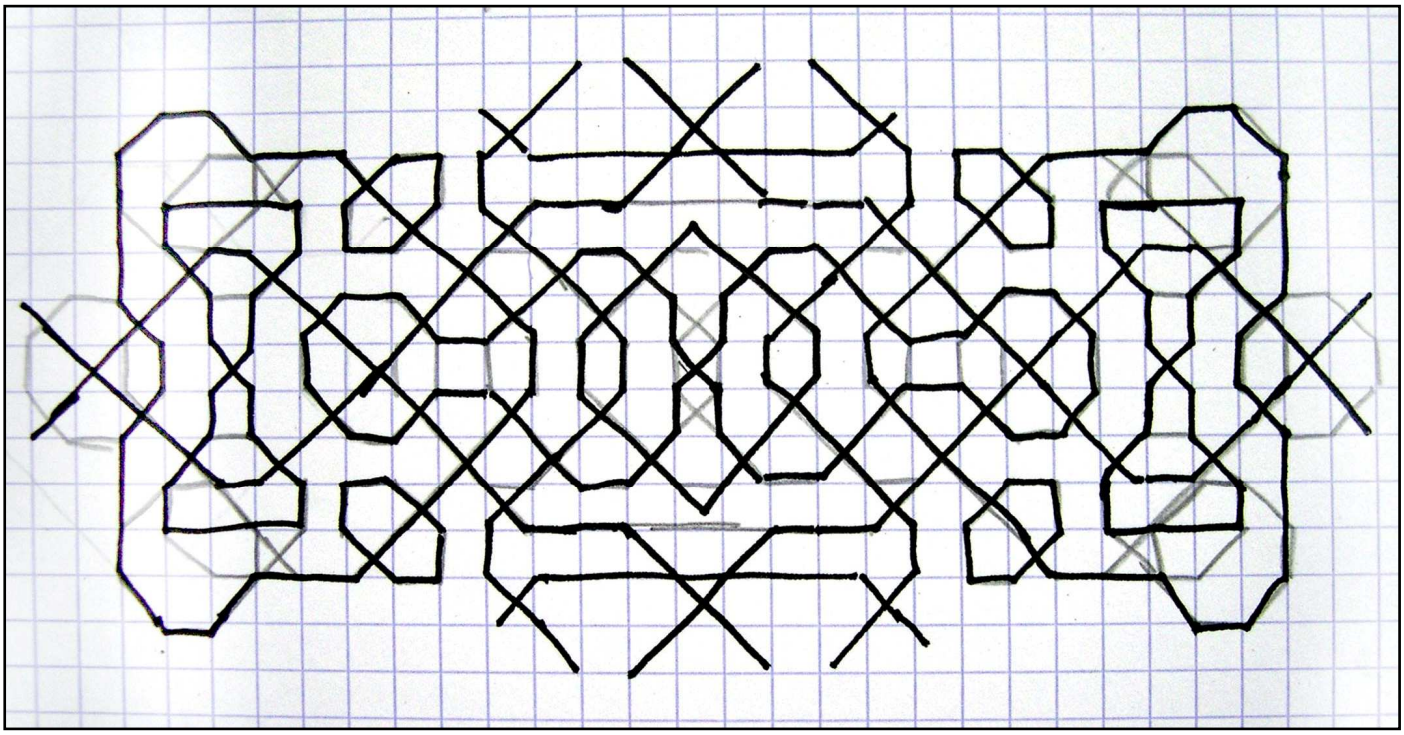


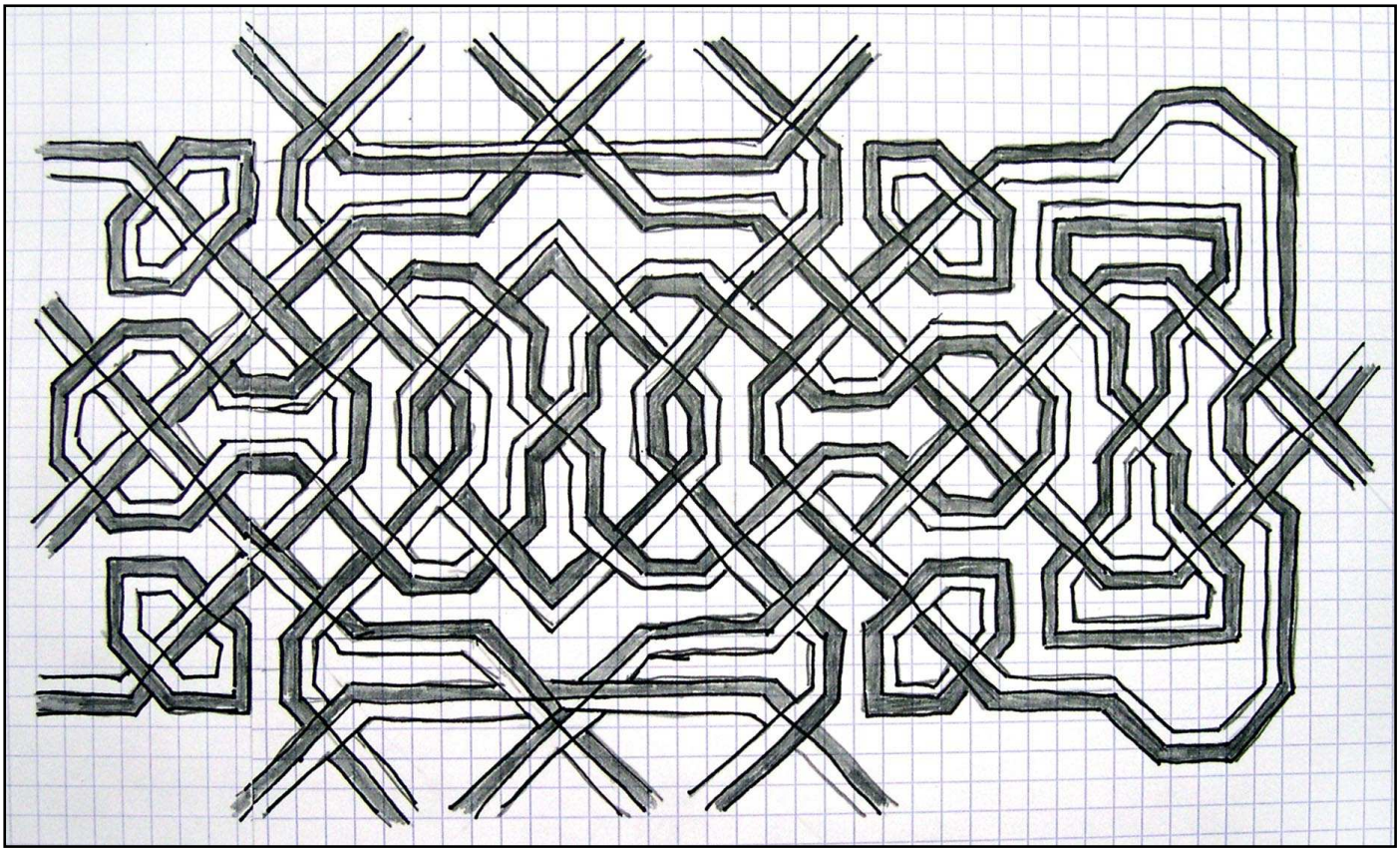








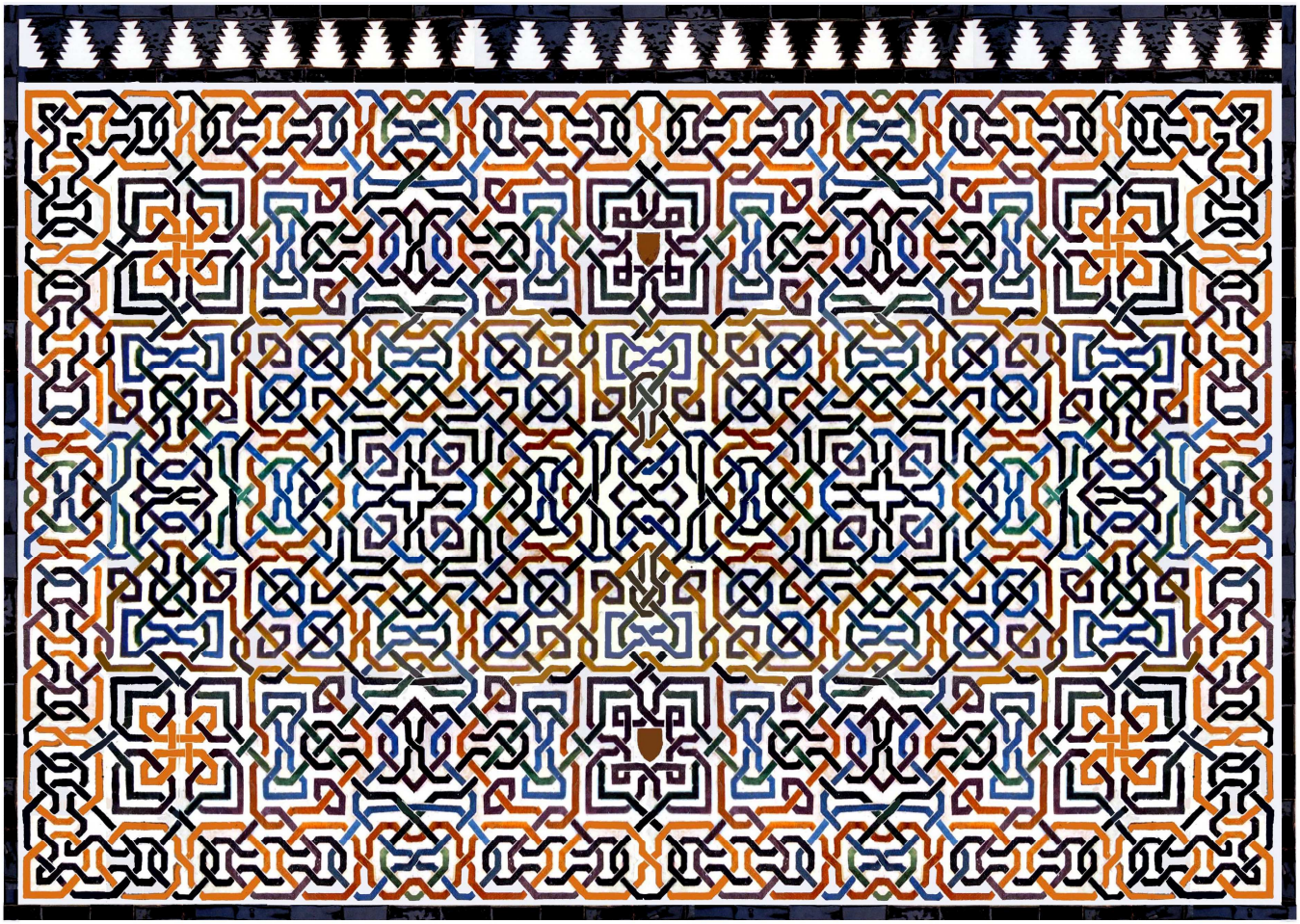


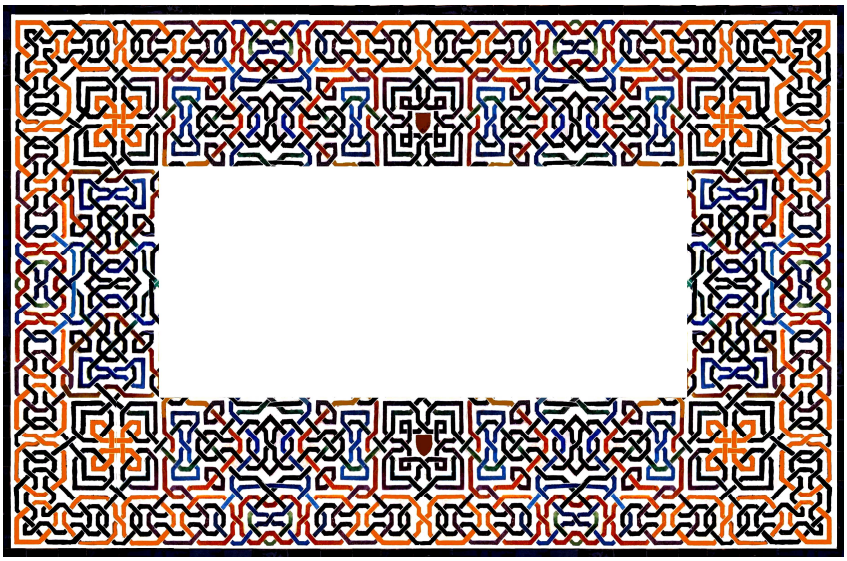


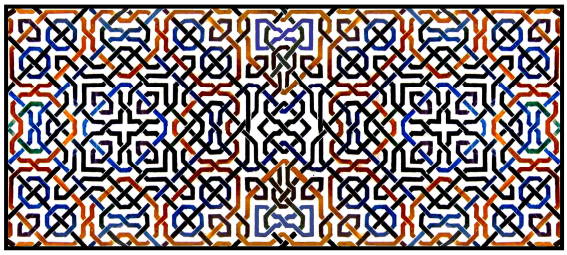
Pour construire le cadre de la page suivante : le bas de la frise a été éliminé par une coupe d'onglet pour adapter les côtés.

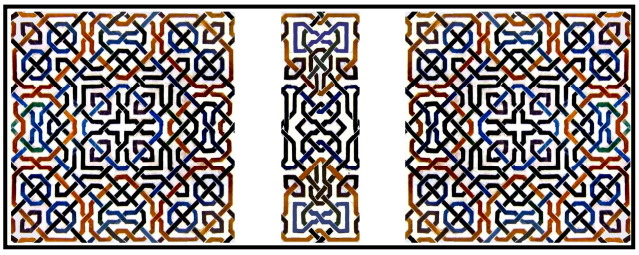
Frise utilisée sous forme de cadre

- *EXEMPLE : Motif type Alhambra.*



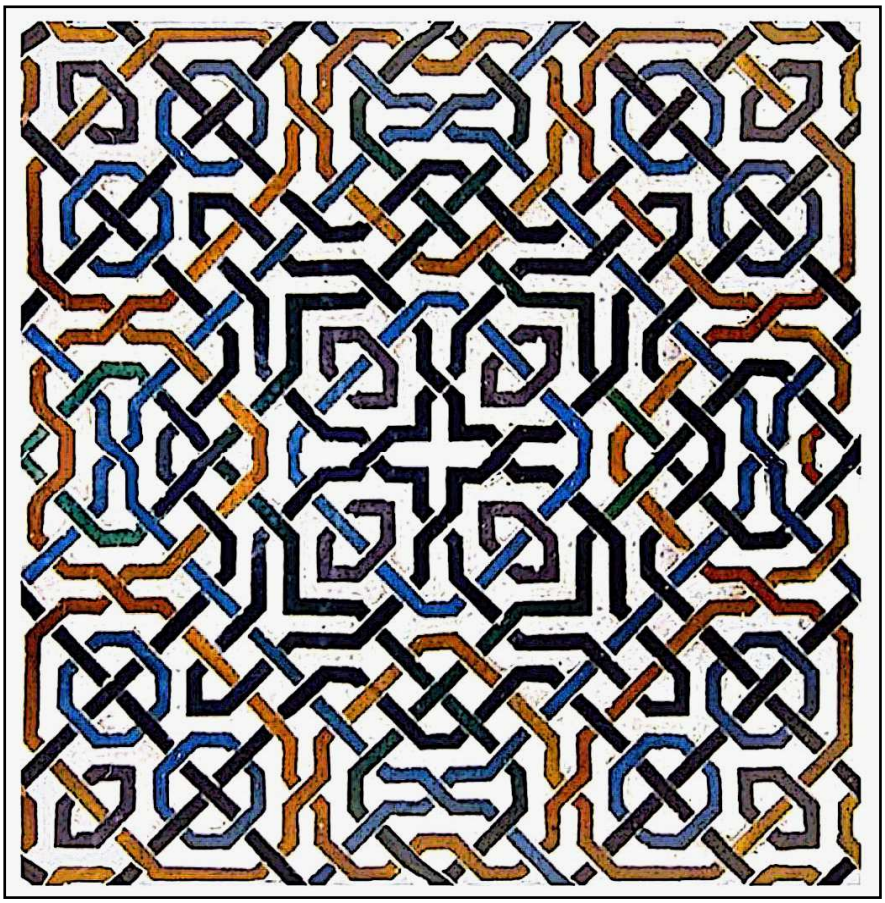




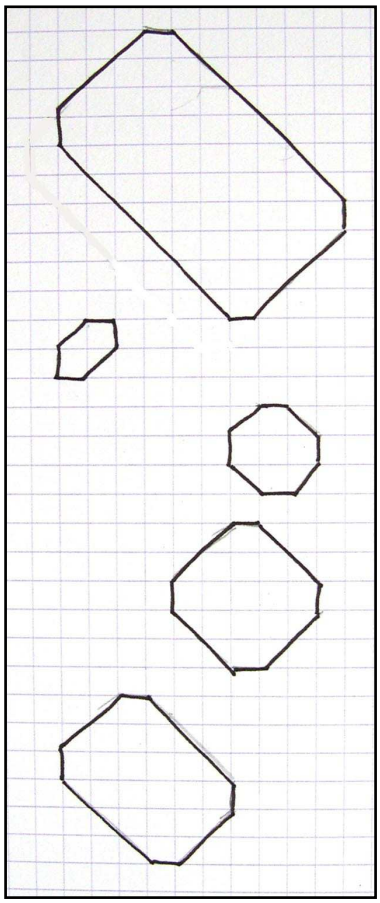


C’est le même cadre étudié précédemment avec pour motif central une bande entourée de deux carrés ; seuls les carrés sont inconnus.

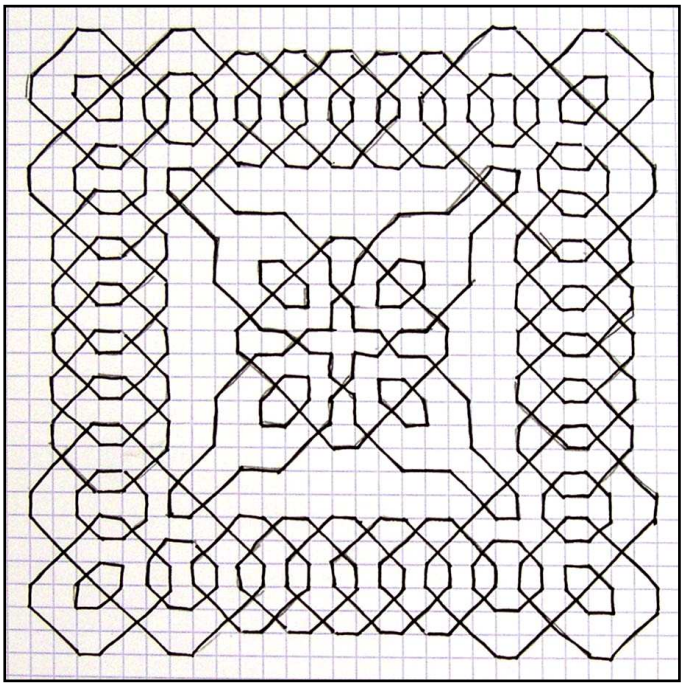
Construction du carré central :



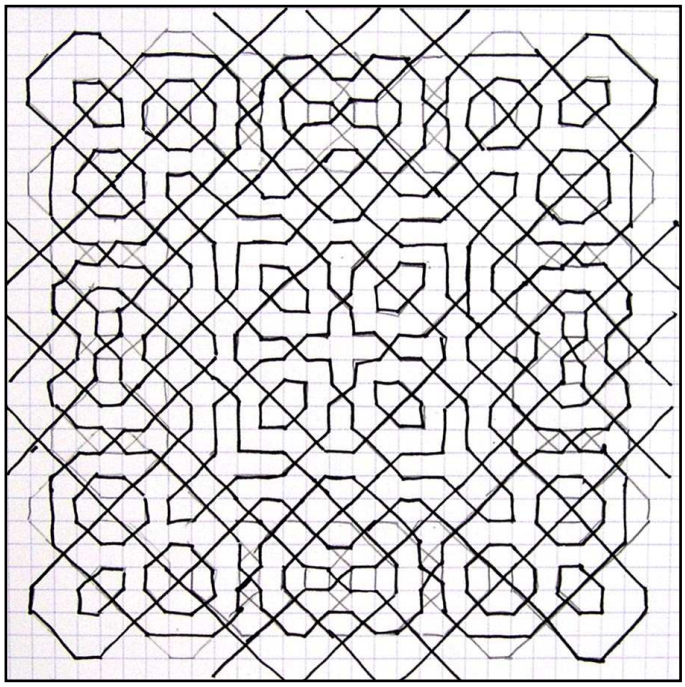
Modules utilisés :

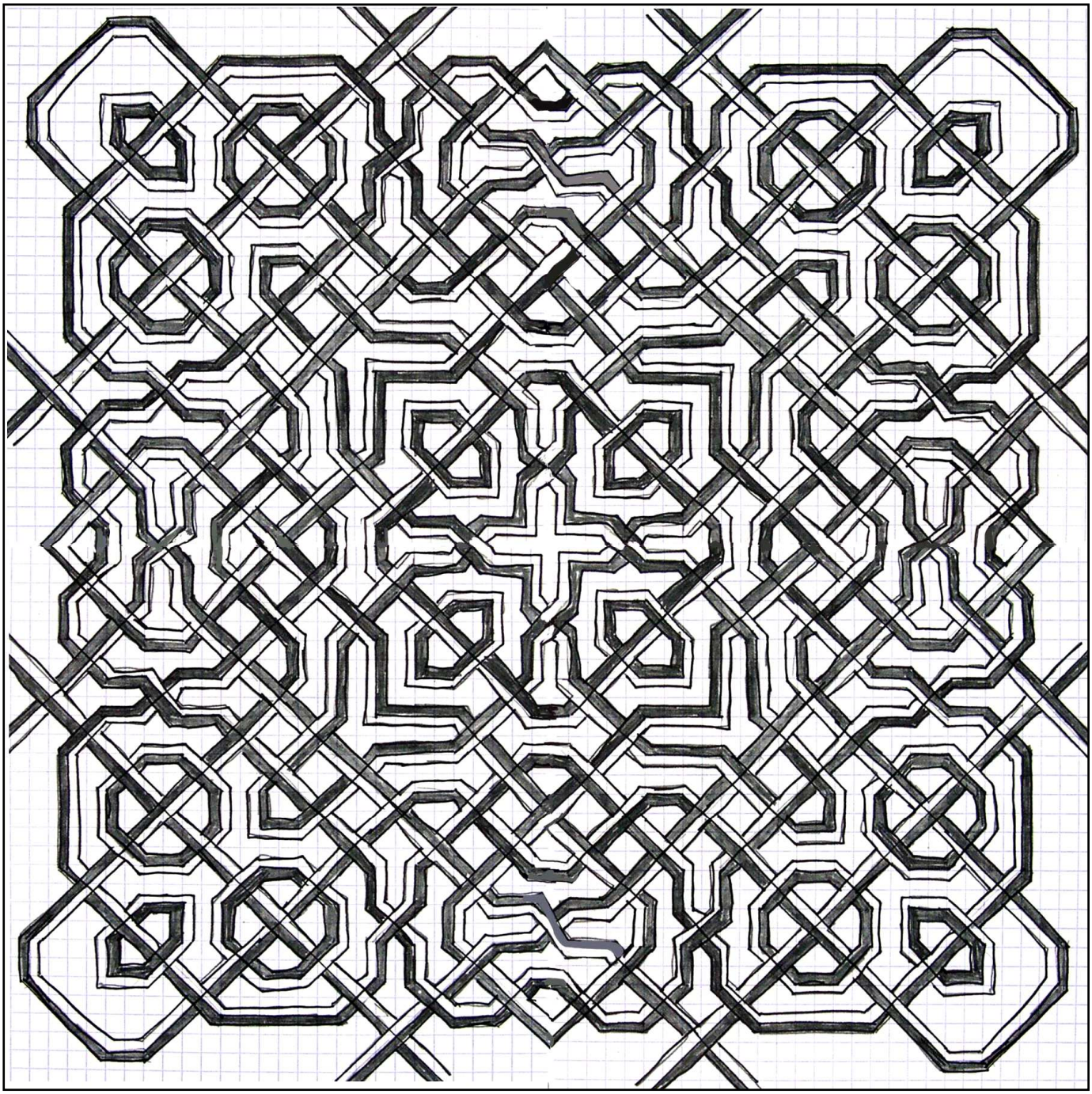


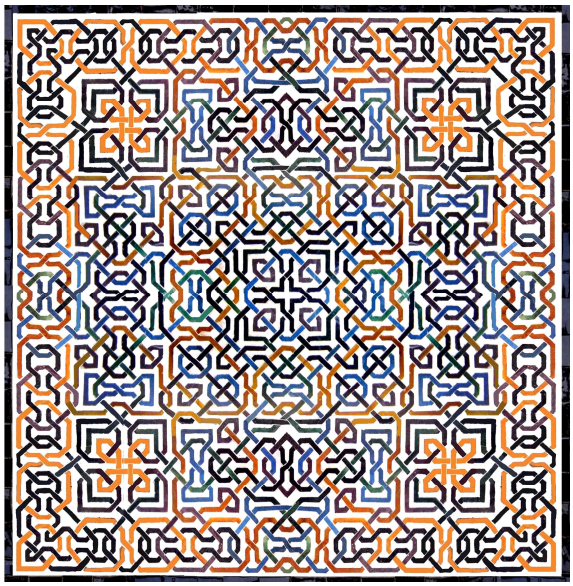
Placement des modules :

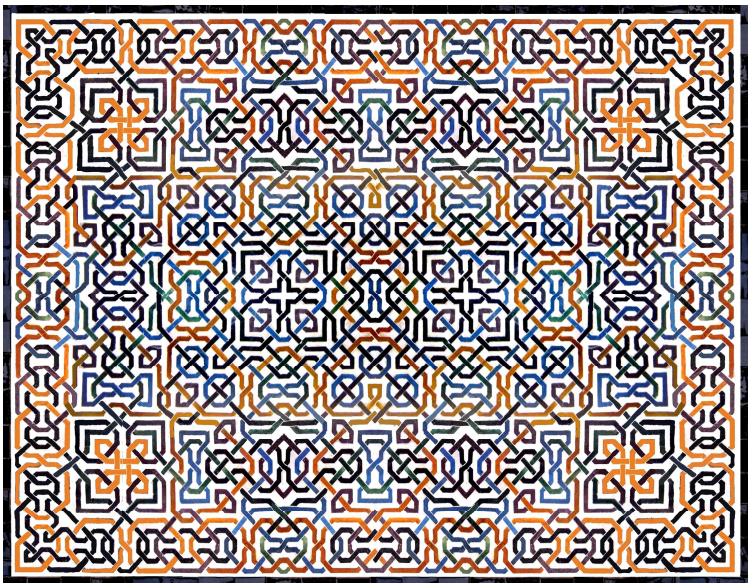


Liaison des modules :

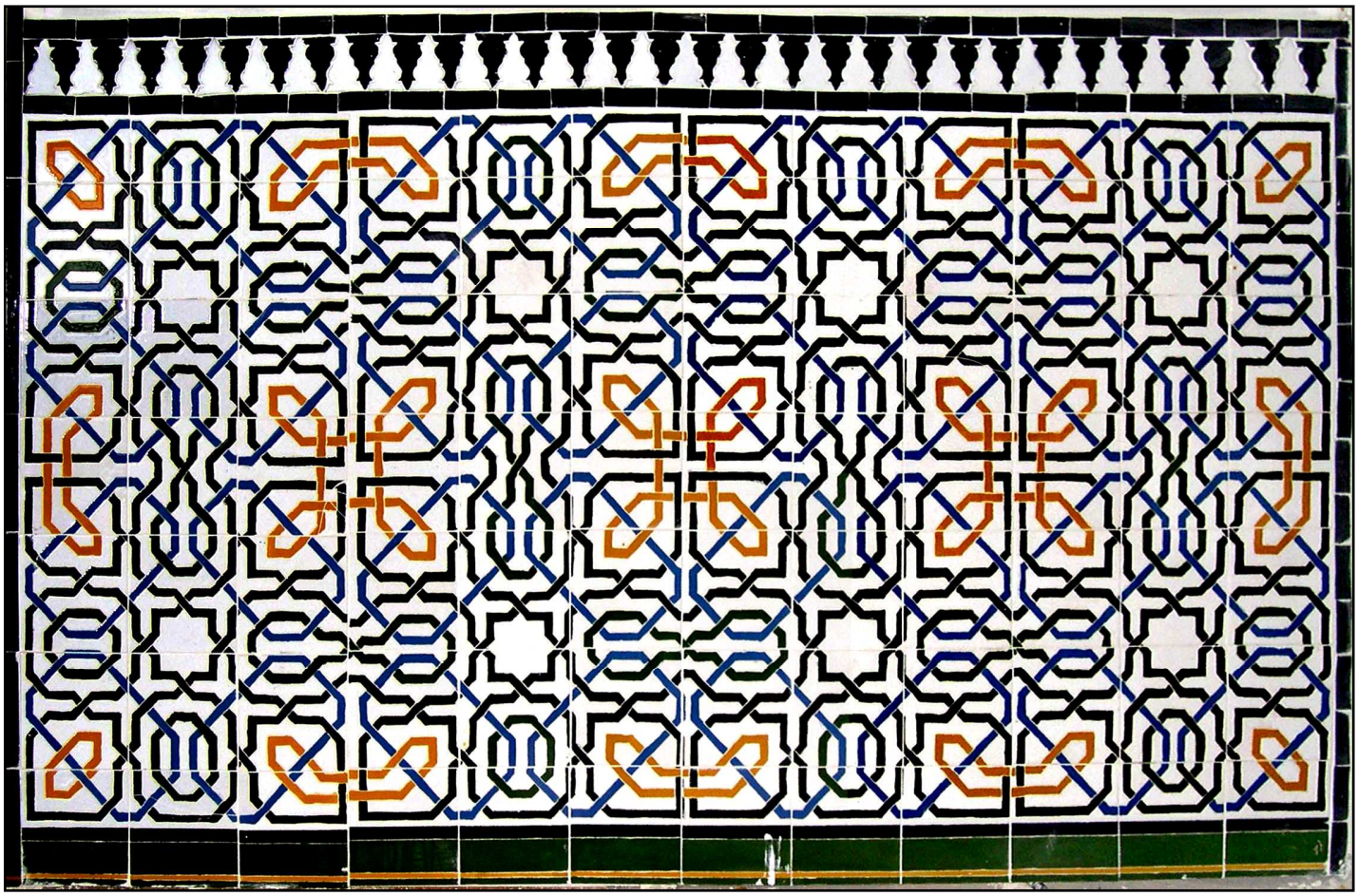




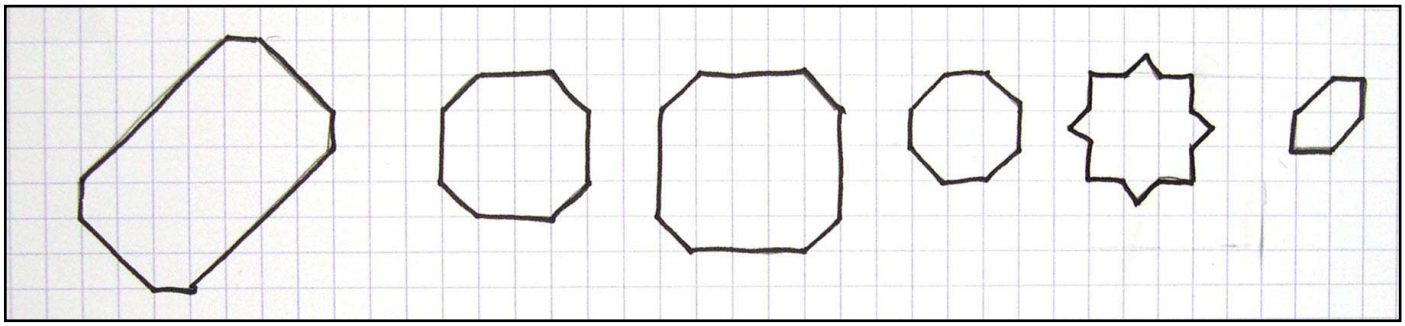


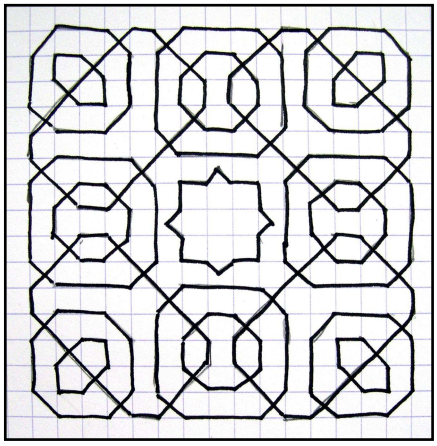


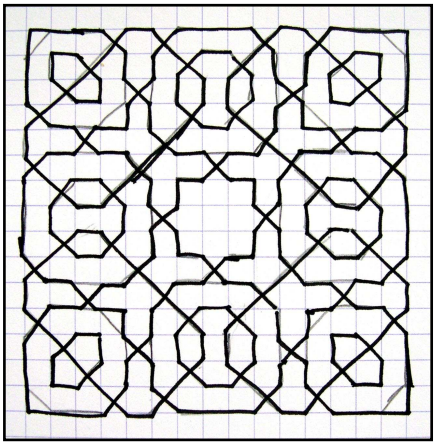
- *EXEMPLE : panneau mural du riad Loulou.*

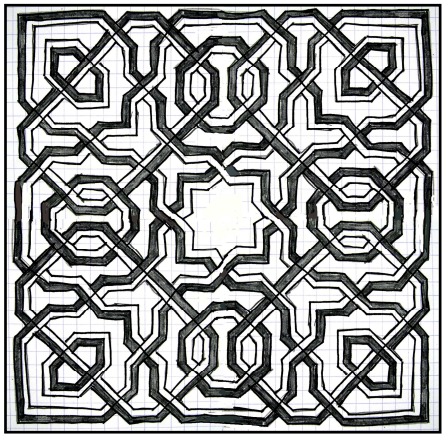


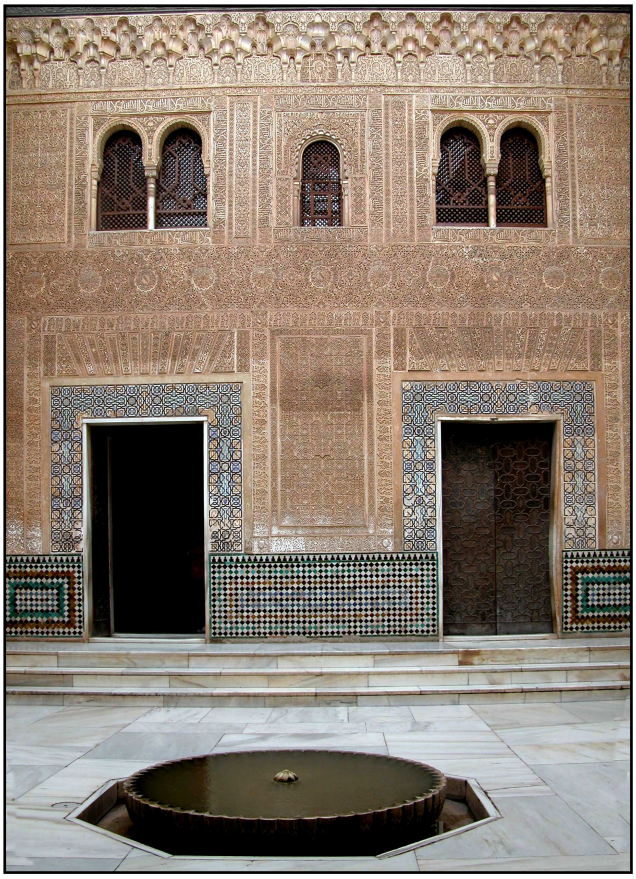
C’est la répétition du même carré minimal ci-dessous.

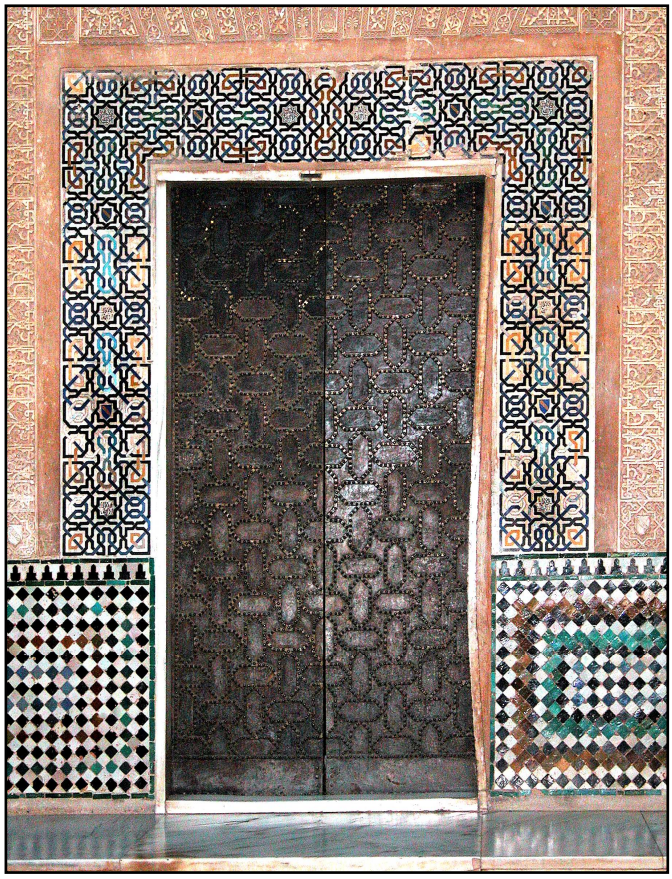


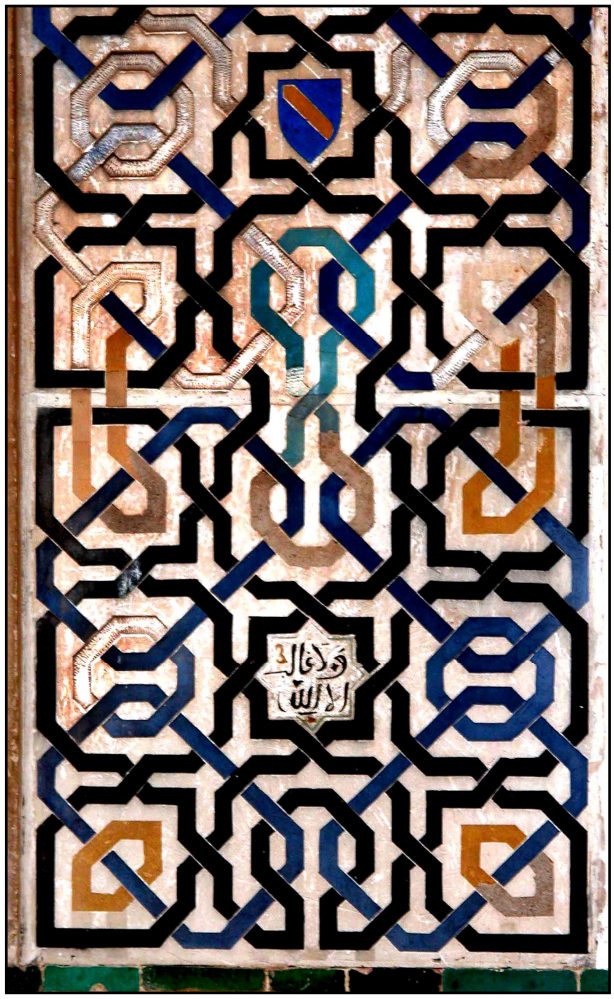






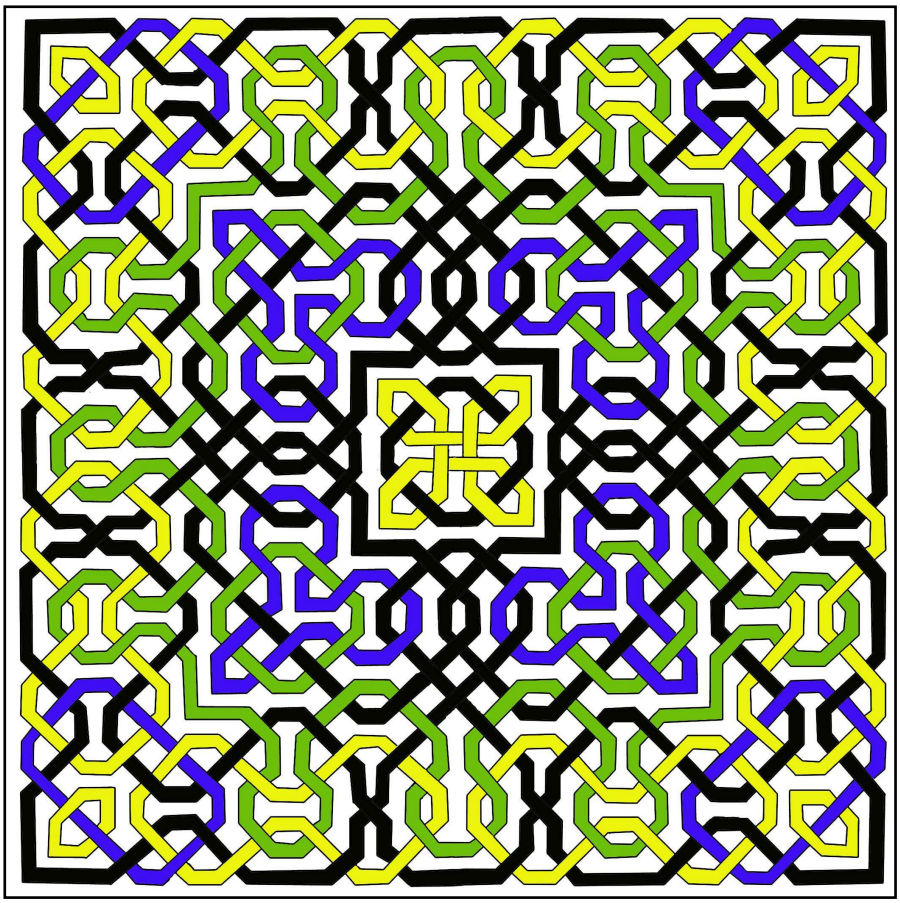






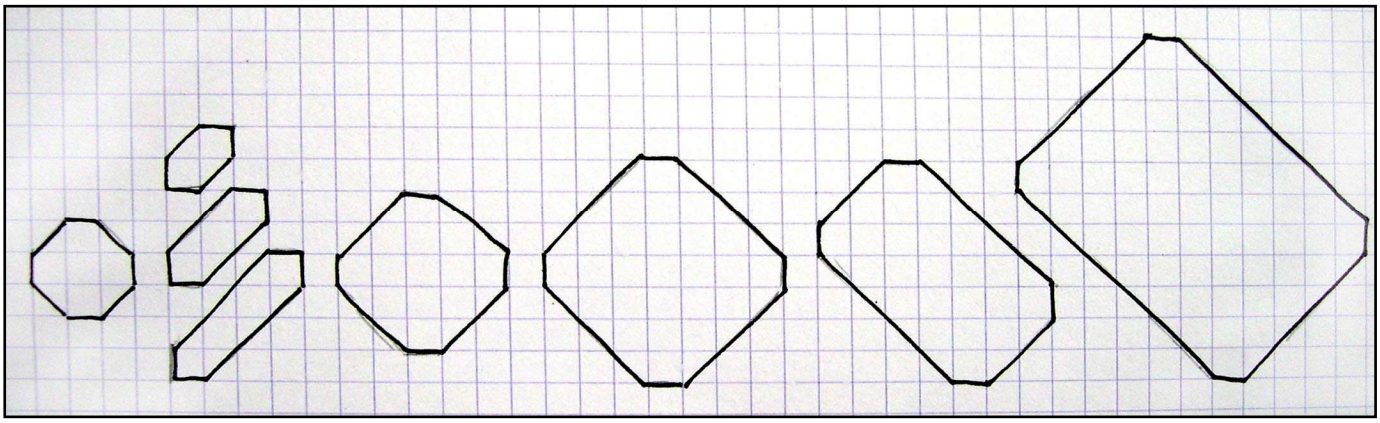
Entrelacs colorés des portes du patio du Mexuar à l'Alhambra.

- *Conception d'un motif:*

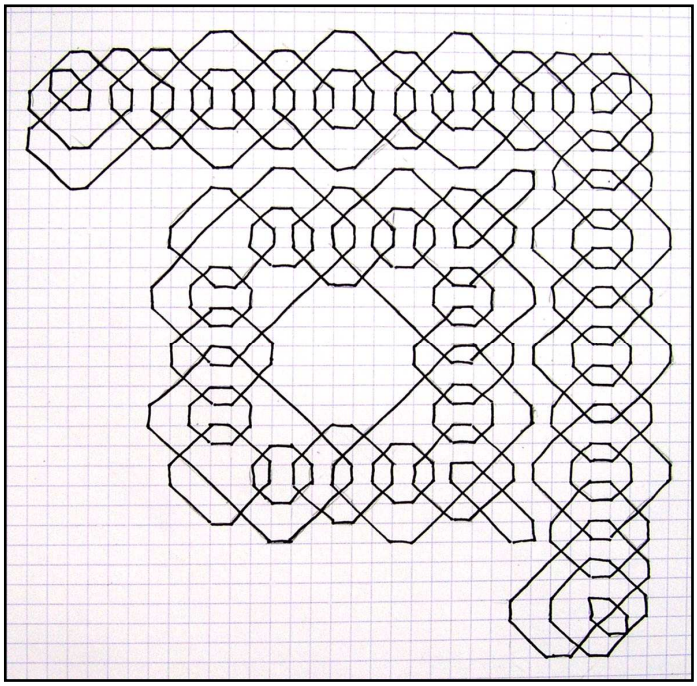


L'utilisation des modules déjà rencontrés permettra d'élaborer le motif original ci-dessus. Pour cela il faut :

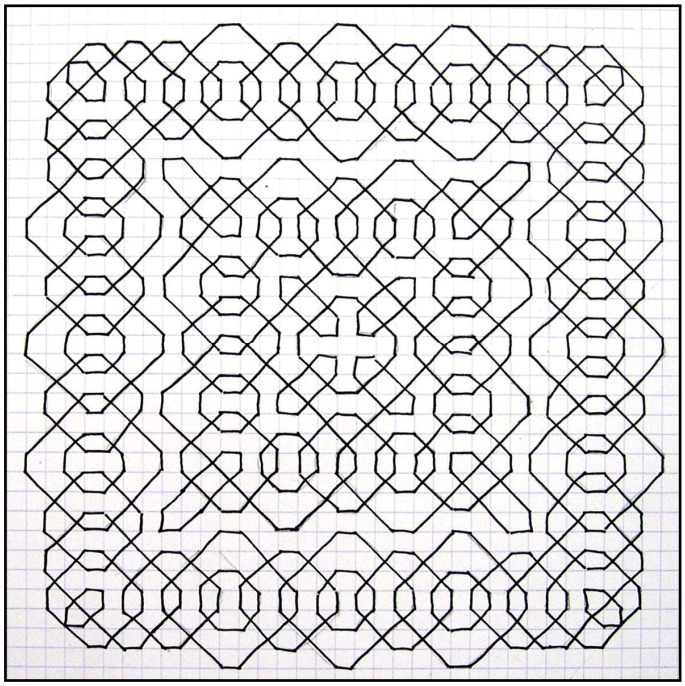
- Construire le motif central ; le milieu pourra être inter changé.
- Construire la frise périphérique.
- Transformer cette frise en cadre en rajoutant les angles.
- Greffer le motif central dans le cadre.
- Tracer le motif définitif.
- Dessiner les entrelacs.
- Choisir les couleurs.



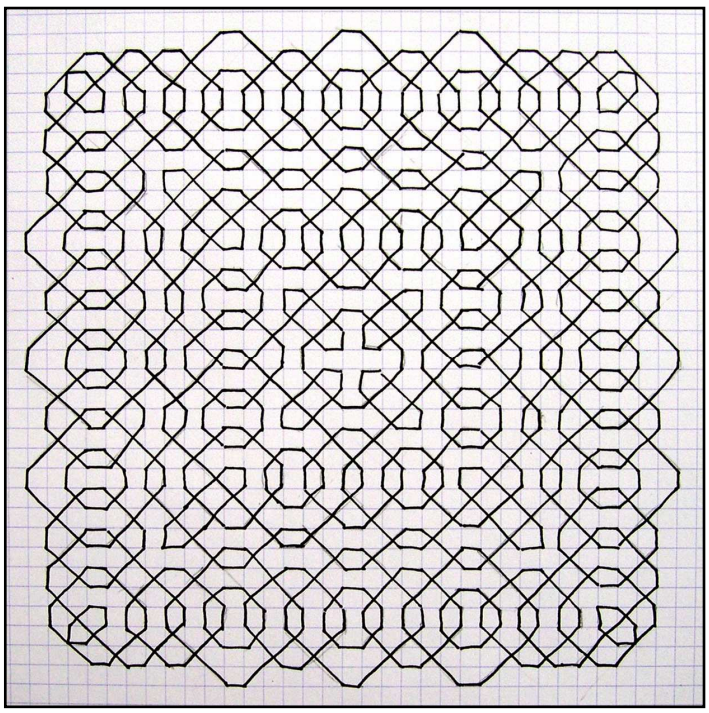
Modules utilisés pour la construction.



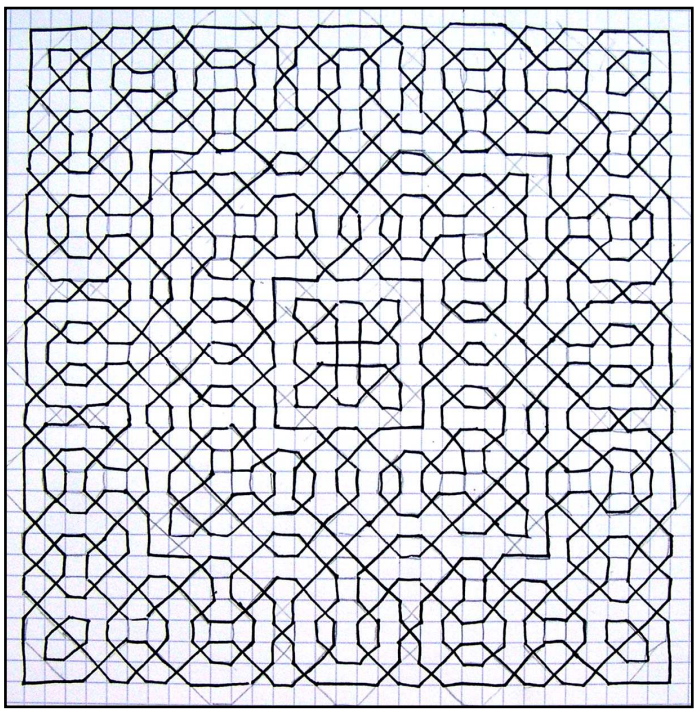
Placement des modules de la frise et du motif central.



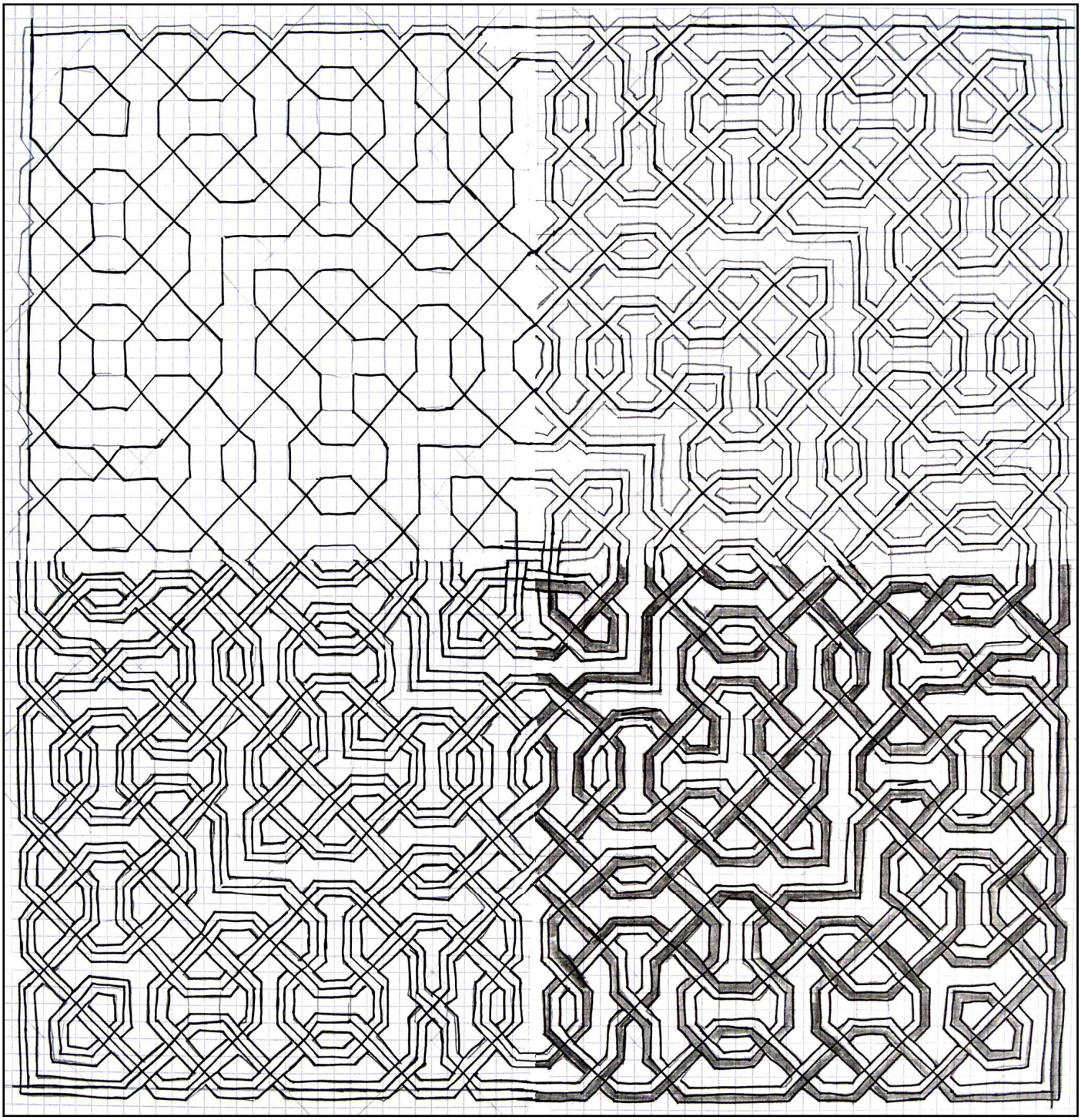
Tous les modules sont placés.

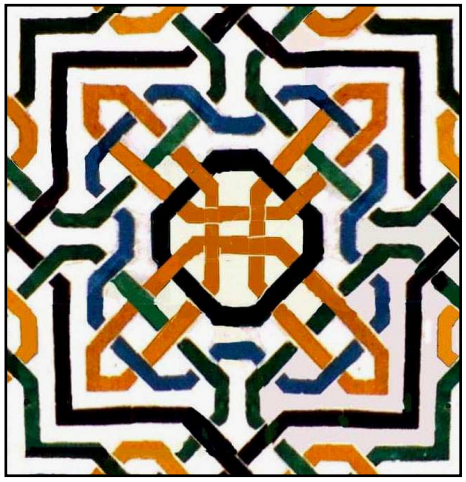


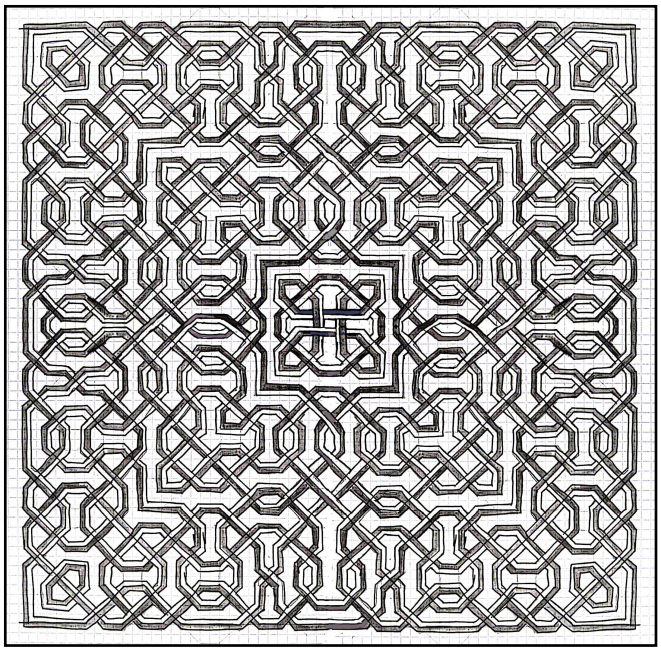
Le motif central et la frise périphérique sont réunis par un laçage.

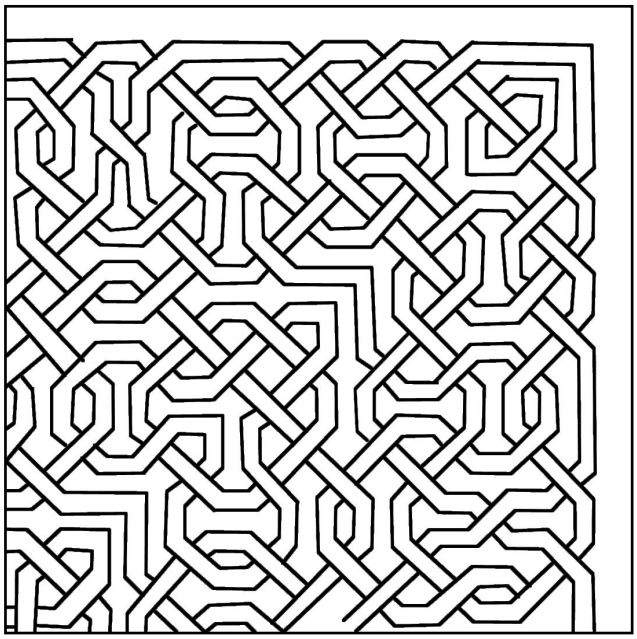


Les traits du module sont interprétés pour terminer le motif.

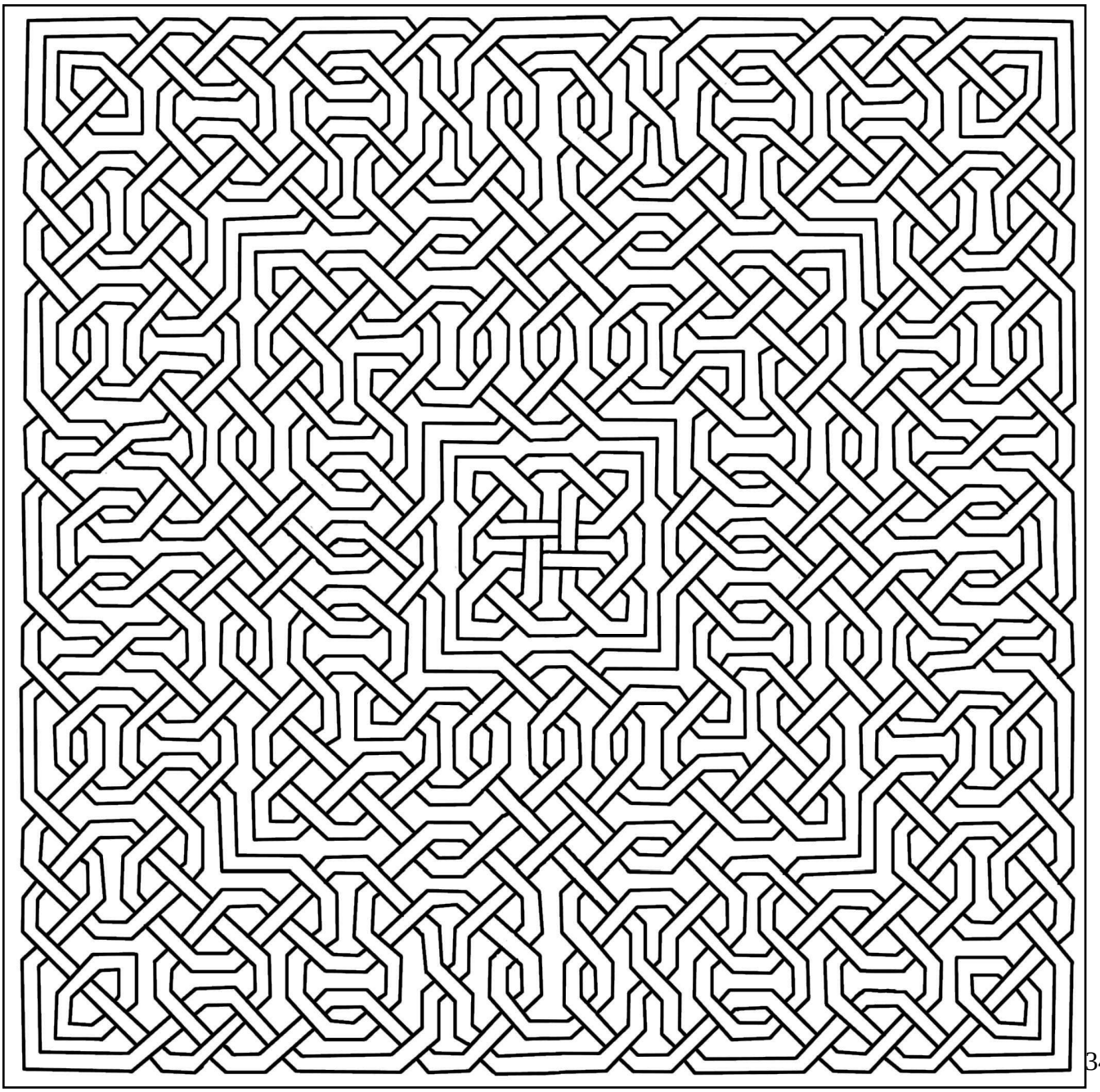


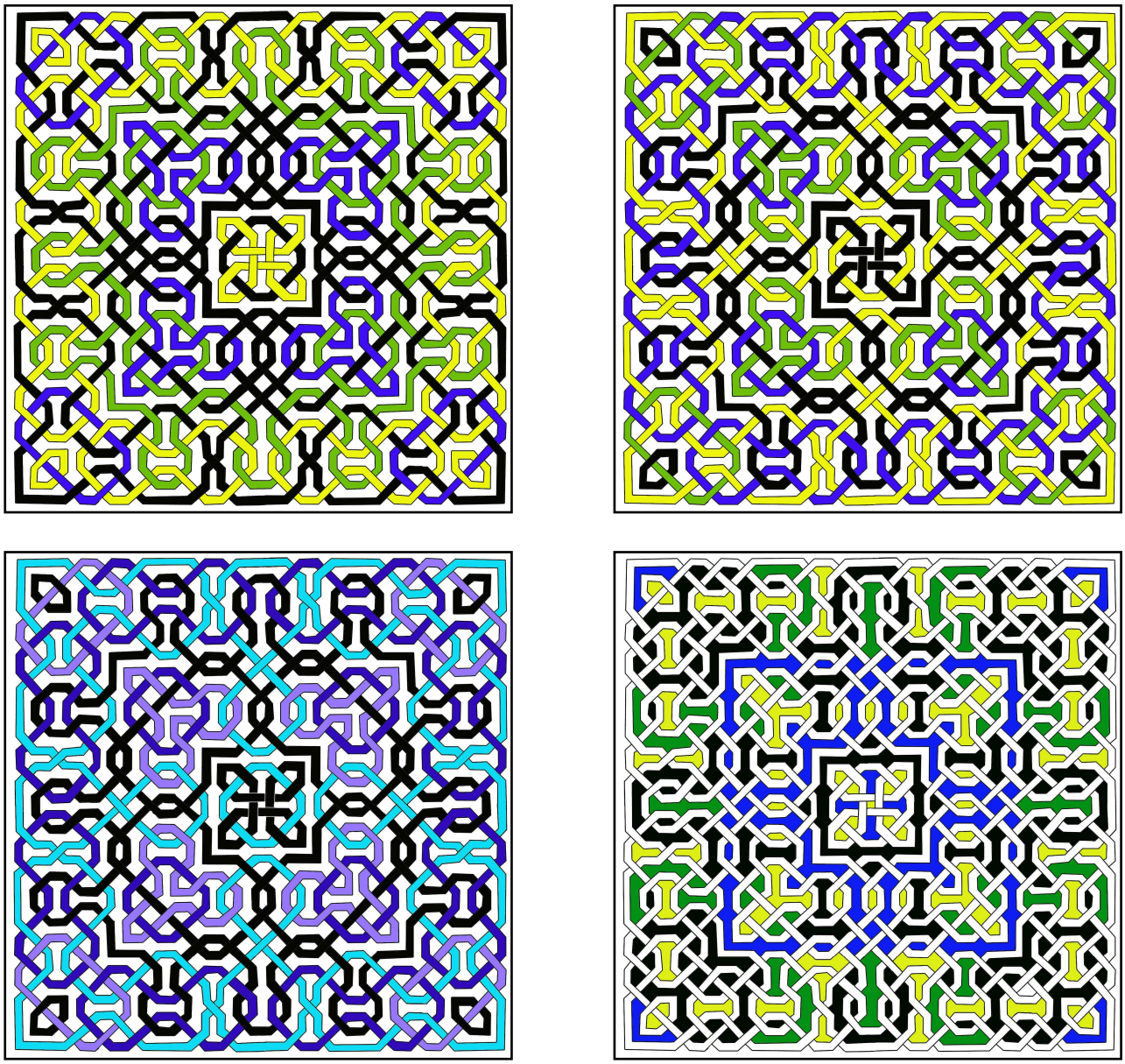




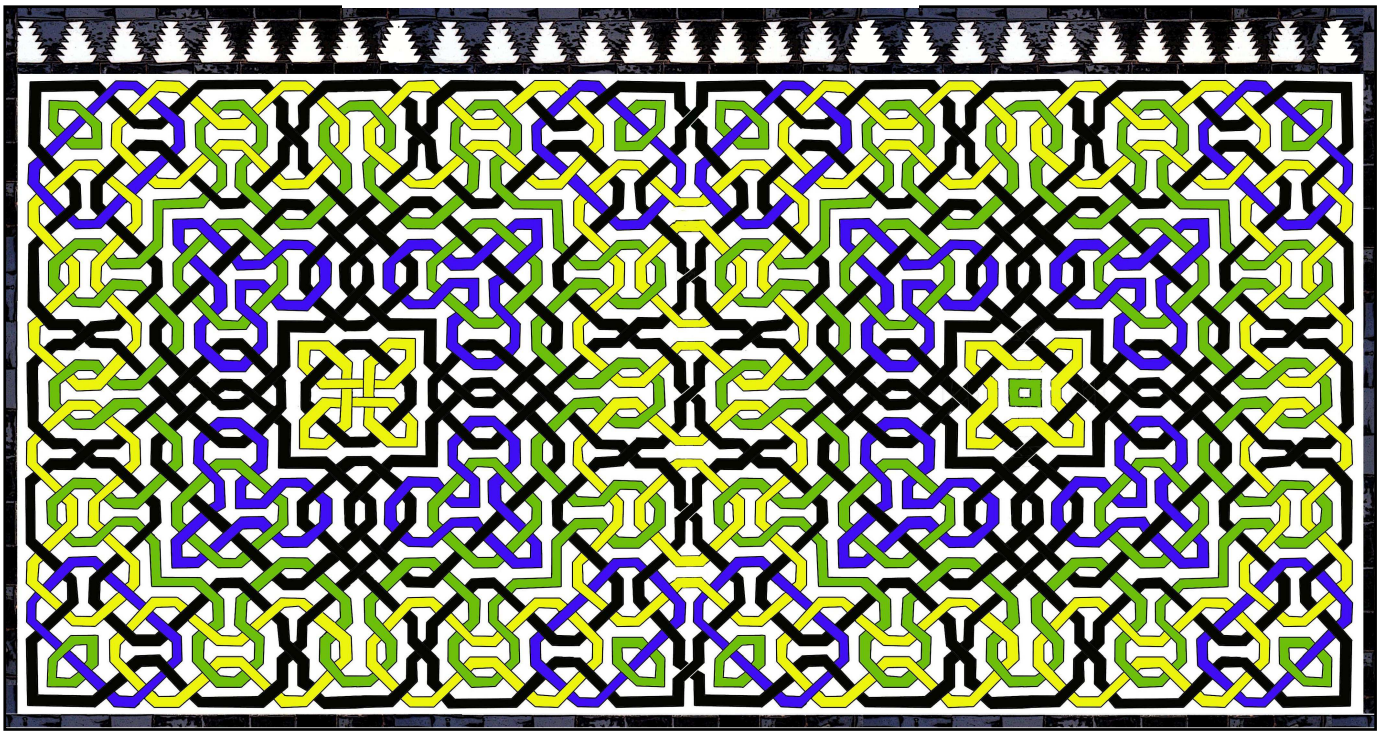


Détourage à l’ordinateur pour pouvoir choisir les couleurs ou pour imprimer le gabarit nécessaire à la construction.

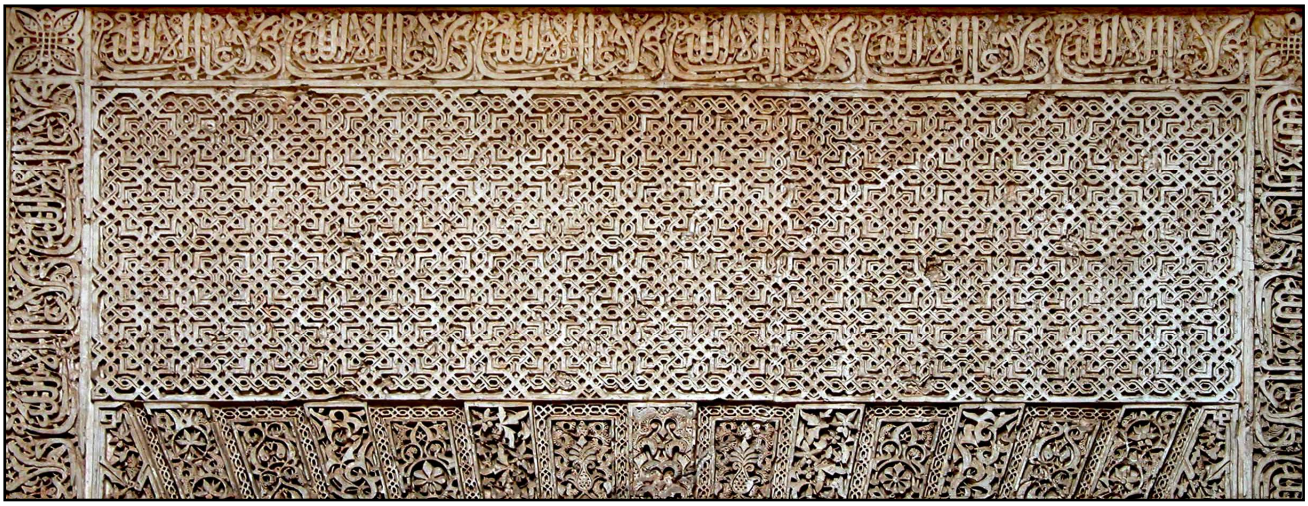


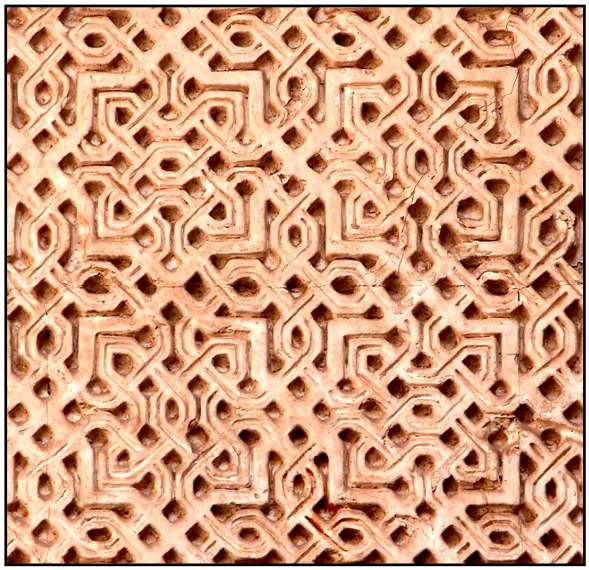


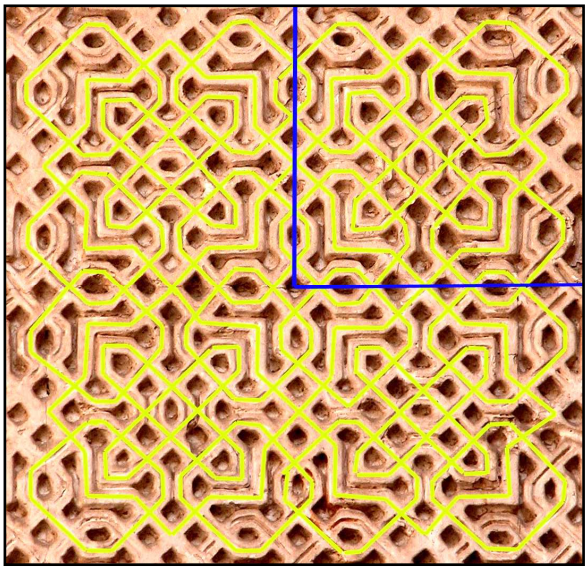
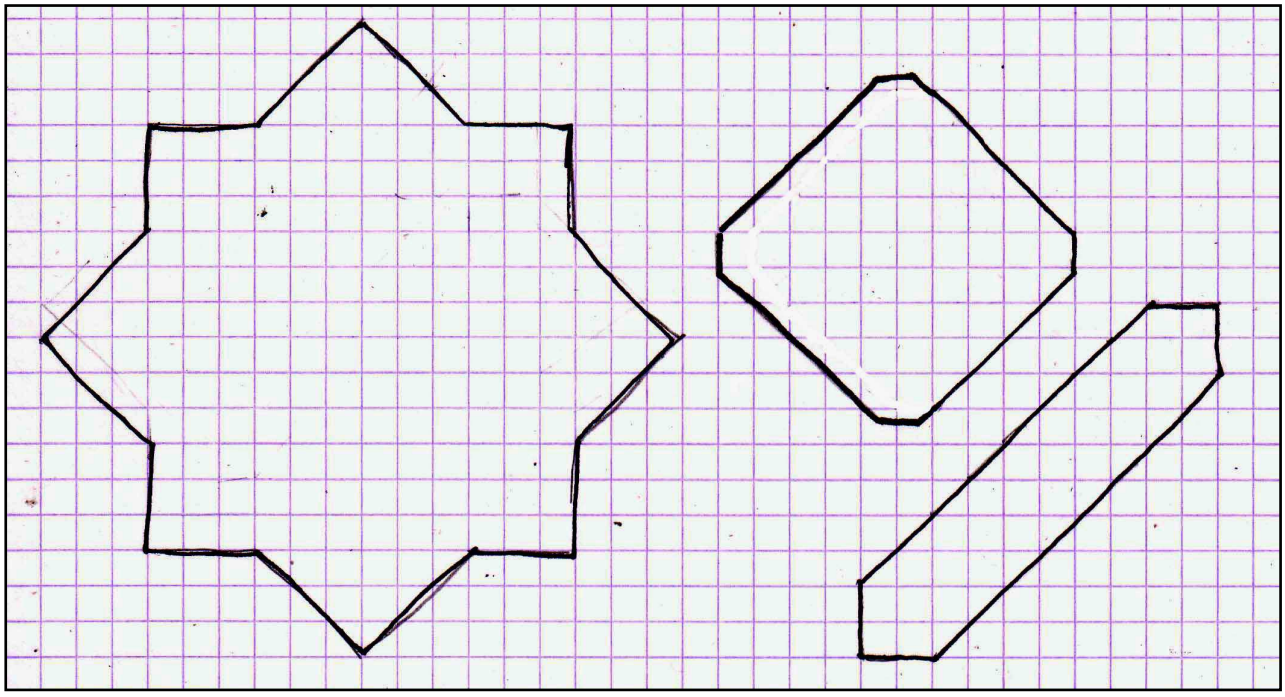
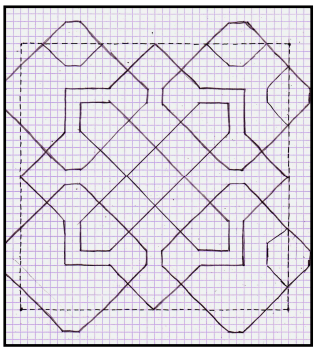
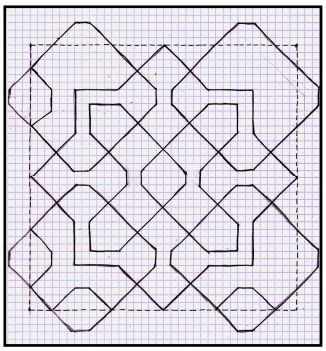
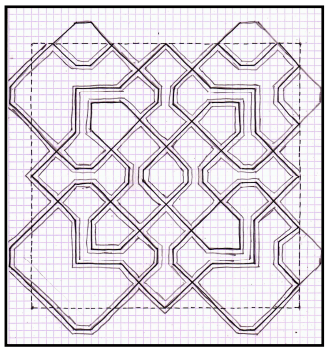
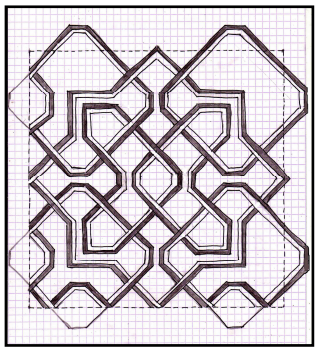
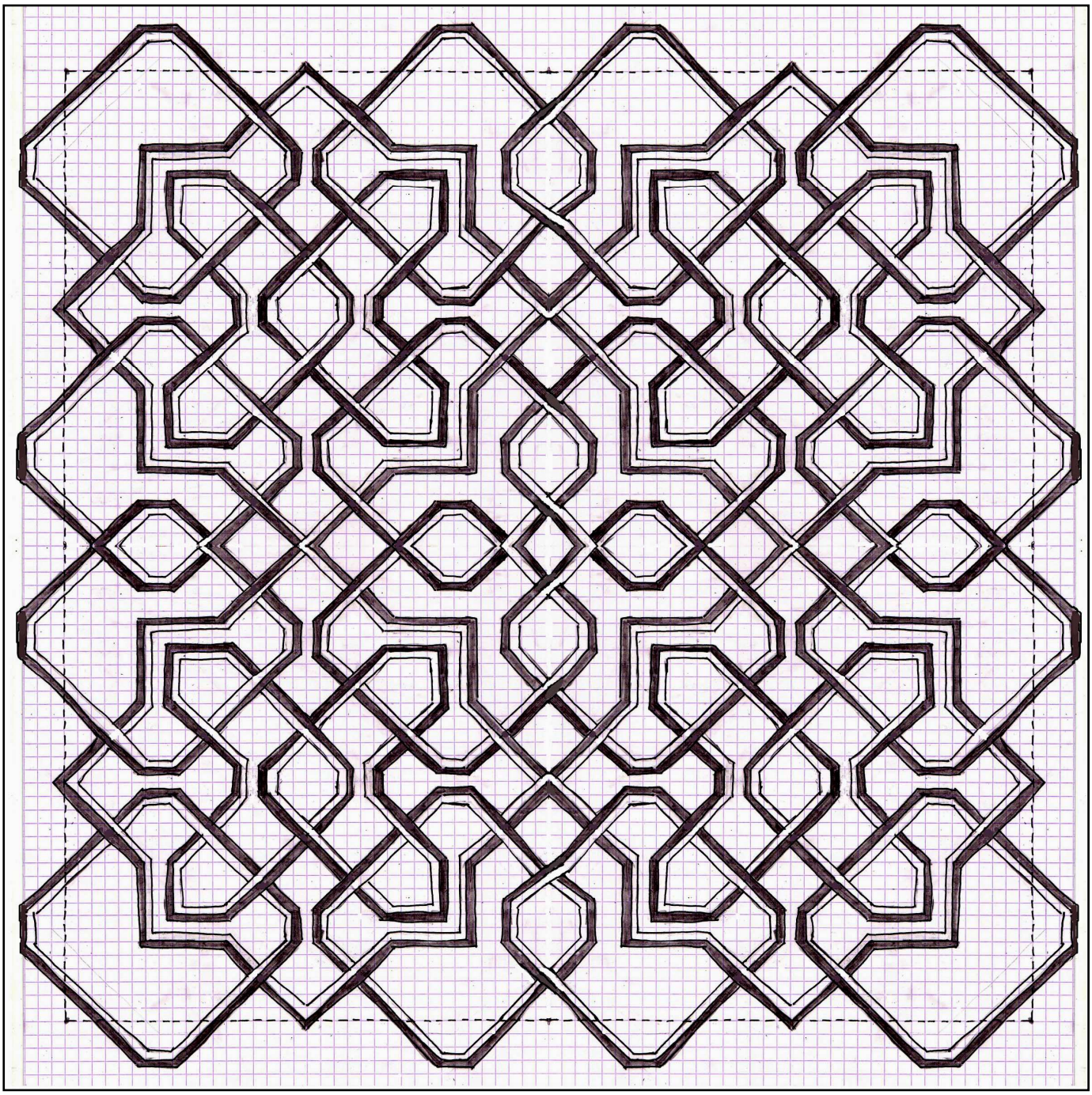
Choix des couleurs.



- *Linteau de l'Alhambra : entrée du Mexuar en stuc.*







Choix des modules utilisés pour construire le carré minimal.